

CORRECTIVE ACTION Lab



Wayne Morganroth
<waynemorganroth@w.
vdhhr.org>

08/29/2003 04:50 PM

To: Joe Slayton/ESC/R3/USEPA/US@EPA

cc: Andrea Labik <andrealabik@wvdhhr.org>, Charlotte Billingsley
<charlottebillingsley@wvdhhr.org>, Gregory Young
<gregoryyoung@wvdhhr.org>, Larry Duffield
<larryduffield@wvdhhr.org>

Subject: WV Response to Your Final On-Site Laboratory Evaluation Report
(USDA)

Joe, Sorry this is arriving just under the wire. We have been
having several irons in the fire recently. Our response is attached to
this communication. Wayne



WV Response, 2003 Final On-Site Lab Evaluation Report (SDWA).doc

LAB

CORRECTIVE ACTION PLAN

IN RESPONSE TO

Final On-Site Laboratory Evaluation Report (SDWA)

Conducted on June 24-25, 2003

BY

**U.S.E.P.A. – Region III
Analytical Services and Quality Assurance Branch**

SUBMITTED BY:

(August 28, 2003)

**WEST VIRGINIA DEPARTMENT OF HEALTH AND HUMAN SERVICES
OFFICE OF LABORATORY SERVICES
ENVIRONMENTAL CHEMISTRY LABORATORY SECTION
4710 CHIMNEY DRIVE, SUITE G
CHARLESTON, WEST VIRGINIA 25302**

Corrective Action Responses to Noted Deviations

Responses will be given following a re-statement of the Deviation as it appears in the Final On-Site Laboratory Evaluation Report (SDWA).

H. Analytical Deviations:

Deviations are those laboratory techniques not in compliance with the mandatory requirements of the analytical methods cited above or with the 1997 EPA Manual for the Certification of Laboratories Analyzing Drinking Water, Fourth Edition, EPA/815-B-97-001, (CLADW). In addition, procedures/techniques, which are considered critical by the inspectors for the production of quality data are cited as "Good Laboratory Practices" (GLP). The following changes are required for the laboratory to be in compliance with the SDWA program (40 CFR 142.10).

General:

1. The principle WV state SDWA laboratory must maintain capability and certification for all the contaminants specified in the State Primary Drinking Water Regulations, p. E-1 CLADW, unless the State has been granted waivers for compliance monitoring of these analytes ~~or has contracted~~ with laboratories which are SDWA certified (by EPA or by a state other than WV such as Lancaster Laboratories, Pennsylvania) for these analytes. A listing of commercial laboratories that are employed by the State program for SDWA compliance monitoring for the analytes not measured at the WV Lab and their current SDWA Certification status (signed copies of the certificates from other state/s) is necessary to complete our records. Also, in the future as new certificates are issued to these laboratories, electronic copies should be routinely forward to the certification officer.

Response: The commercial laboratories employed by the State program for SDWA compliance monitoring for analytes that are not measured at the WV Lab (at Big Chimney, WV) are listed in the table on the following page (could not be satisfactorily entered at this point and break across on the following page). The information in this table has been obtained from a database listing supplied to us by Ms. Linda Keller, Assistant Manager of Regulatory Development and Compliance, Office of Environmental Health Services.

Signed copies of the certifying certificates for those out-of-State laboratories listed in the table, below, will be forwarded via US Mail. When new signed home-state or NELAP certificates are received from out-of-state certified laboratories copies will be made and forwarded to Region III Certifying personnel.

Issue for
Discussion

State of West Virginia Drinking Water Analyses Performed By Laboratories Other Than the OLS Env. Chemistry Lab

(Analyzed 1-1-02 through 8-15-03)

Laboratory Name	Home State Certificate	In WV Certified For	
		Micro- biology	Chemistry
Analabs, Inc.	WV	X	X
Aqua Tech Laboratories	OH		X
Beckley Water Co.	WV	X	
Am. Water Works Service Co. Lab	IL		X
Clarksburg Water Board	WV	X	
C T & E, Environmental Div.	WV		X
Environmental Eng. & Technology	VA		X
Envirolab, Inc.	WV	X	
Environmental Health Labs	IN		X
Fairmont Water Plant	WV	X	
Hydrochem Labs	WV	X	
KNL	FL		Radiochem.
Lancaster Labs	PA		X
Morgantown Utility Board	WV	X	
National Testing, Ltd.	MI		X
R E I Consultants, Inc.	WV	X	X
Reliance Laboratories	WV	X	X
Sturm Environmental Services *	WV	X	X
Test America	FL		X
Tra-Det Labs	WV	X	
Water Environmental Testing	WV	X	
Weirton Water Treatment	WV	X	
Wheeling Water Treatment Plant	WV	X	X
West Virginia Dept. of Health #	WV		X
Laboratory Services #	EPA	X	X
WV - Am Water Co - Bluefield	WV	X	
WV - Am Water Co - Bluestone	WV	X	
WV - Am Water Co - Huntington	WV	X	
WV - Am Water Co - Charleston	WV	X	X
WV - Am Water Co - Montgomery	WV	X	
WV - Am Water Co - Oak Hill	WV	X	
WV - Am Water Co - Weston	WV	X	

* For 2002 only.

These are not commercial labs - State Labs at So. Charleston, Big Chimney and Kearneysville, WV.

2. The inorganic non-metal results are routinely qualified "not valid for SDWA compliance reporting". However, on several occasions the results were not flagged (samples 30039-turbidity; 30021-alkalinity, pH, sulfate, and TDS). It is suggested that the "#" code be added to all temperature dependent analytes which are not chilled during transport as a part of the "Inorganic Chemistry Analysis Report" template. In addition, the "@" indicating exceedance of holding time should be added directly to the form for pH results.

Response: The "#" code has been added to the "Inorganic Chemistry Analysis Report" template for all of those analytes that are routinely received at temperatures in excess of those required (temperatures) for preservation from the time of sampling. This includes the following analytes: sulfate, total dissolved solids, alkalinity, conductivity and turbidity. The "@" code, used for identifying the customer that pH samples have exceeded the holding time prior to analysis and are therefore questionable, has also been added to the report template, as requested. A copy of the corrected "Inorganic Chemistry Analysis Report" will be sent by U.S. Mail.

Ex. 5 - Deliberative

1:

The results from duplicate pH analyses should not be averaged unless the correct mathematical procedure for taking the average of logarithmic numbers (GLP) is followed. It is suggested that instead of using an average, the pH result with the greatest difference from 6.5-8.5 be reported.

Ex. 5 - Deliberative

Response: This suggestion has been implemented; its routine use will be documented in the Standard Operating Procedure for pH Analysis (via approved method-EPA-150.1), which will be completed.

Ex. 5 - Deliberative

Ion Chromatography:

The bench record (instrument printout) needs include the initials of the analyst and date to complement the initials and date printed by the software (GLP).

Response: This suggestion has been implemented and the routine use of this practice will be added to the Standard Operating Procedure for Ion Chromatographic Analysis (via EPA method 8000.0) when it is completed. An example of an instrument printout that includes handwritten initials of the analyst and the date of analysis will be forwarded via US mail.

Ex. 5 - Deliberative

Turbidity:

A check standard (IPC) is required to be analyzed at the beginning, at 10% frequency and at the end of the analyses set (EPA 180.1).

Ex. 5 - Deliberative

Response: An AMCO 0.5 NTU primary turbidity standard was ordered for use as a check standard for the 1.0, 0.8, 0.6, 0.4, 0.2 and blank NTU turbidity calibration curve. For the 10, 8, 6,

4, 2 and blank NTU turbidity calibration curve an AMCO 5.0 NTU primary turbidity standard has been purchased. Both of these AMCO standards are presently being used as mid-curve calibration check standards.

I. Recommendations:

These items are offered as suggestions (not required):

Response: It is anticipated that all of the recommendations will eventually be implemented. The following is a description of those that have now been initiated:

- d. Consideration should be given to the purchase of cyanide stock material, as the titration procedure to standardize the material is very technique dependent.

Response: This recommendation is in the process of being implemented.

- e. A separate refrigerator is recommended for the storage of samples separate from calibration and QC materials.

Response: The old two door refrigerator has been removed from the wet chemistry laboratory and a spare refrigerator in the laboratory will be used for sample storage after thermometer (on order) have been received and calibrated against a reference thermometer.

- f. The practice of recording the sample temperatures in the determination of conductance should be continued since it was determined by the laboratory to be the source of PT difficulty.

Response: Changes to the standard operating procedure for conductivity using the approved SM 2510B method will include a section pertaining to the importance of the sample temperature. When a determination of the cell constant is made the value calculated is partially dependent on the temperature of the calibration solution. Because of this a range of ± 4 °C will be set for sample temperatures when conductivity readings are taken. These temperatures will be noted and recorded at the time of calibration/analysis.

- i. It is suggested that the frequency of balance verifications should be increased to be done with each analyses when weight critical measurements are made (preparation of calibration stocks, gravimetric analyses, such as TDS, mechanical pipet checks, and when small quantities < 100 mg are measured). The reference weights should be stored in a desiccator.

Response: The suggestion made has been implemented and documented. The desiccator for the reference weights is being looked into.

- J. The newly initiated procedure for recording of the calibration of thermometers in a log book (previously recorded only on a thermometer tag) should be continued.

Response: The thermometer calibration log sheet has been up-dated to include a comment section so the analyst can record thermometers that have been removed from service.

Corrective Action (Program)



Wayne Morganroth
<waynemorganroth@wvdhhr.org>


08/21/2003 03:37 PM


To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc: Andrea Labik <andrealabik@wvdhhr.org>, Charlotte Billingsley
<charlottebillingsley@wvdhhr.org>, Gregory Young
<gregoryyoung@wvdhhr.org>, Larry Duffield
<larryduffield@wvdhhr.org>


Subject: Re-sending of WV Response to EPA SDWA Lab Certification
Program: On-Site Review

Joe, This is the second re-sending of our 8-15-03 e-mail
attempt to transmit this response and attachments. Wayne

 2003 On-Site CORRECTIVE ACTION PLAN.doc

 I. Change in Certification Status Review Action.doc

II. Aqua Tech, Melmore Lab '03-1 Herbicides Laboratory Certification Status Change Review.doc


III. Aqua Tech, Melmore Lab '03-1 Pesticides Laboratory Certification Status Change Review.doc


Lab Cert Program

CORRECTIVE ACTION PLAN

IN RESPONSE TO

**SDWA Lab Certification Program:
On-Site Review
Completed 8-08-03**

Conducted on June 25-26, 2003

BY

**U.S.E.P.A. – Region III
Analytical Services and Quality Assurance Branch**

SUBMITTED BY

**WEST VIRGINIA DEPARTMENT OF HEALTH AND HUMAN SERVICES
OFFICE OF LABORATORY SERVICES
ENVIRONMENTAL CHEMISTRY LABORATORY SECTION
4710 CHIMNEY DRIVE, SUITE G
CHARLESTON, WEST VIRGINIA 25302**

Corrective Action Responses

For clarification purposes all responses are made following, in each instance, a copy of the assessors' comments relative to the area in which corrective action must be addressed and implemented. Responses are limited to those Findings and Suggestions that pertain to the chemistry portion of the West Virginia certification program.

Findings & Suggestions:

1. On-site Laboratory Inspections:

Finding: Though several laboratories have dropped out or have been decertified for chemistry, of the eight remaining in-State laboratories in the program, the on-sites for three laboratories are greatly overdue. (All three were last assessed in 1997 – making them three years overdue for an assessment and six years total since the last visit by WV's laboratory certification personnel).

Suggested Corrective Action: During the closing meeting with the Laboratory Director, Associate Director and lead chemistry CO, the necessity for completing these on-sites was stressed. These must be conducted as soon as possible particularly since the laboratories continue to be listed on the WV web page as fully certified. In the future, laboratories which are due for an on-site and have not had one within the 3 year cycle (any over one year overdue) should be decertified by the WV program.

Ex. 5 - Deliberative

Response: Since the completion of the on-site inspection the following schedules have been implemented in order to perform on-sites for the three laboratories that have not been inspected since 1997:

<u>Laboratory Name</u>	<u>Scheduled On-Site Dates</u>	<u>Status</u>
REI Consultants	July 29-30, 2003	Completed
C T & E Environmental Svcs.	August 12-13, 2003	To be completed Pre-survey packet received
Reliance Laboratories	August 26-27, 2003	To be completed Pre-survey packet Received

In addition an initial on-site inspection has been scheduled for the following laboratory:

Sturm Environmental Services	September 23-24, 2003	Pre-survey has been Mailed to laboratory
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This latter laboratory was previously certified, but was decertified in 2003 because they had not submitted any acceptable WS PT data in 2002. They recently requested an on-site inspection as

a means of initiating re-certification as a drinking water laboratory in support of the SDWA.

Scheduling and performing on-sites in the future will be performed such that all in-State laboratories will be consistently surveyed within the EPA mandated 3 year cycle. Our proposed schedule of on-site surveys for the next four years is as follows:

Laboratory Name	Projected On-Site Survey Date			
	Month in 2004	Month in 2005	Month in 2006	Month in 2007
A. C. & S.	April	-----	-----	April
Analabs, Inc.	June	-----	-----	June
C. T. & E. Env.	-----	-----	March	-----
REI Consultants	-----	-----	April	-----
Reliance Labs	-----	-----	June	-----
Special Analytical Svcs.	May	-----	-----	May
Sturm Env.	-----	-----	July	-----
WV Am. Water	March	-----	-----	March
Wheeling Water Treatment	July	-----	-----	July

This schedule has two good points that tend to commend its usage in our certification program:

1. Laboratories situated close to our office (names are bolded in the table) are scheduled early in the year when extensive travel may be problematic due to cold and icy road conditions and 2. All on-sites for the year would be completed by the end of July thereby providing a block of relatively free time during August through the middle of October in which to review all laboratories' records in preparation for the issuance of certificates and certified fields of testing at the beginning of the new year.

2. WV Web page (www.wvhdhhr.org):

a. **Finding:** A discussion with Victor Wilford, Environmental Health Services, indicated that it is critical that the web-site listing of laboratories certified by WV be accurate since the water utilities are instructed to employ such laboratories for SDWA analyses. Unfortunately, this important source of information is not being kept up to date (last updated March 2002). Since that time, it was indicated that several laboratories have lost their WV SDWA certifications and should not be listed on the WV web site at all, e.g., Reliance Analytical Services, Inc. (Hedgesville, WV), as a result of a WV on-site assessment on July 25, 2001.

Suggested Corrective Action: During the closing briefing of this assessment it was agreed that the WV program engineers would be notified by Email as soon as possible of the laboratories that should not be listed on the web site. Also, it was agreed that the web site would be updated with regard to de-certified laboratories as soon as possible.

Response: This corrective action has been implemented. Since our recent on-site evaluation by EPA we have been notifying appropriate personnel (via e-mail) in OLS and OEHS of changes in laboratory certifications or laboratory de-certifications. To ensure that this information is efficiently relayed to the program engineers I have been including CC addresses to Linda Keller in the Office of Environmental Services. She is the Assistant Manager of Regulatory Development and Compliance. In turn she is prompt in relaying this information to all program engineers. I am attaching copies of 2 or 3 e-mails I have sent to appropriate personnel as a means of keeping them apprized of laboratory certification changes.

Finding: The web site lists certification only by parameter group, e.g., Trace Metals group I and II, and not by method and analyte/s.

Suggested Corrective Action: It was agreed during the closing meeting of EPA's assessment, that Laboratory Services would complete the necessary upgrade to the web page that will allow the page to list (or point to files containing) laboratory certification status by method and analyte.

Response: This corrective action has been implemented since the completion of EPA's on-site survey of our program. Our web site has been up-dated such that laboratory certifications for individual analytes also list the certified method/s the laboratory utilizes in analyzing for the analyte. The date of this revision of the web address was July 2, 2003. The web site address is www.wvdhhr.org which is slightly different than that supplied in your On-Site Review (due I am quite sure to a typo).

3. Certification of Out-of-State Laboratories:

Finding: The certification of out-of-State laboratories represents a considerable drain on resources. It was pointed out that this work is justified for microbiology since the laboratories are near the borders of neighboring states and do a significant amount of WV SDWA work. However, the amount of chemical analyses being done by out-of-State laboratories is unknown.

Suggested Corrective Action: It is suggested that Laboratory Services work with the WV Environmental Health Services program managers to determine if the amount of work sent to out-of-State laboratories, and based upon that information, determine whether the certification of these laboratories for chemistry should be continued. It is suggested that future applications for WV certification should include a listing of water supplies for which the laboratory has performed work for in the past or is projected to perform work for in the future. If this portion of the chemistry certification program is unnecessary, removing it or reducing it should help direct available resources to conduct the necessary work for in the in-State laboratories.

Response: The Office of Laboratory Services and the Office of Environmental Services will be meeting shortly to consider what action can be taken to reduce the number of out-of-State drinking water laboratories WV certifies. However some personnel believe that it will be necessary to change the Code of State Regulations before it will be legal to de-certify those out-of-State laboratories that are presently certified.

Ex. 5 - Deliberative

4. Scope of Certification/Approval:

Finding: The listing of laboratory certifications and approvals provided by Laboratory Services for chemistry do not include the full scope of the SDWA program and also include certifications which are not provided by Laboratory Services.

Suggested Corrective Action: Laboratory Services should work with the WV Environmental Health Services program managers to determine possible additional areas for certification and/or approval, e.g., alkalinity, bromate, calcium, chlorite, conductivity, orthophosphate, pH, turbidity, silica, Specific Ultraviolet Absorption (SUVA) and TOC. Also, consideration should be given to dropping radiochemistry and asbestos from the listing.

Response: Appropriate action with regard to the **Suggested Corrective Action** will need to be addressed after Laboratory Services and the Office of Environmental Health Services have a meeting to jointly decide the appropriate action that should be taken to add additional analytes from the specified list. We are presently certifying laboratories for TOC and SUVA analyses if they are presently a certified drinking water laboratory and have obtained acceptable WS PT results for these two analytical areas. For some time our certification personnel have wished to remove radiochemistry analyses from our listing of certifiable analytes. We have never certified laboratories for radionuclide analyses and have listed laboratories that were so certified by the Office of Environmental Health Services for informational purposes only. Although we can make such a deletion, I am not sure we can take a like action for asbestos since we are presently certifying (via reciprocity) one out-of-State laboratory for this parameter. This laboratory is situated in California and is certified for asbestos (by two EPA methods) by the California NELAP Authority.

Ex. 5 - Deliberative

5. Additional Suggestions:

- a. Not applicable to the chemistry certification program.
- b. Not applicable to the chemistry certification program.
- c. Consideration should be given to requiring all records/information exchanges with the SDWA laboratories to be electronic. This would speed the process and provide an efficient method to easily organize records (in directories).
- d. The Environmental Chemistry Standard Operating Procedures, Laboratory Certification Program (Revision 4/20/02 approved 5/2/02) needs page numbers and section numbers.

Ex. 5 - Deliberative

Ex. 5 - Deliberative

Response: All suggestions concerning West Virginia's Certification Program are being considered for adoption and will be implemented whenever it is possible. We agree that communications with the Office of Environmental Health Services and certified laboratories have been lacking in completeness and timeliness. Since our recent on-site survey by

EPA our certification program has been increasingly using e-mail messaging to OEHS, certified laboratories and OLS administrative personnel (some detailing of this has been given in the **Response to Finding and Suggestions 2.**). It is anticipated that our use of electronic communication will shortly supplant that performed via U.S. mail or fax transmission.

From: Wayne Morganroth
To: mherdlick@atellabs.com
Date: 7/31/2003 4:58:14 PM
Subject: Change in Certification Status Review Action

Mr. Herdlick, The attached certification status review sheets list the up-dated West Virginia certification status for pesticides and herbicides for Aqua Techs' Melmore, Ohio laboratory. These changes have been made upon the basis of a review of: 1. An up-dated certification status from the Ohio EPA for Diquat which now lists the currently correct certified method for Diquat as EPA Method 549.2 rather than the supplanted EPA Method 549.1 and 2. New WS PT data that give acceptable PT results for Dalapon by EPA Method 515.1. This information dictates the change in status for 2003 for the Melmore Laboratory of Aqua Tech Environmental Laboratories from not certified to CERTIFIED for both Diquat and Dalapon.

Wayne Morganroth
Chief Chemical Certification Officer
State of West Virginia Certification Program
Environmental Chemistry Laboratory
Charleston, WV 25302

CC: Charlotte Billingsley; Linda Keller; Tom Ong

Laboratory Certification Status Review

Certification Status Change

Review and Effective Date: April 23, 2003

Laboratory Name: Aqua Tech, Melmore Lab

Home State: Ohio

Abbreviation: C – Certified, PC – Provisionally Certified, NC – Not Certified, NA - Not Acceptable, A –Acceptable, NAP – Not Approved

2002 Home State Certificate Information		2003 West Virginia Certification Status	
Home-State Certified Analytes	Method Numbers	WV Certified Method Nos.	Comments/Explanation
Herbicides			
2, 4-D	515.1	515.1	Certified
2,4,5-TP (Silvex)	515.1	515.1	Certified
Pentachlorophenol	515.1	515.1	Certified
Dinoseb	515.1	515.1	Certified
Dalapon	515.1	515.1	Certified
Picloram	515.1	515.1	Certified

Laboratory Certification Status Review

Change in Certification Status

Review and Effective Date: April 23, 2003

Laboratory Name: Aqua Tech, Melmore Lab

Type of Certification: Via Home State (Ohio) Evaluation of Individual Analysts

Current Certificate Effective Dates: Starting dates from 8/23/00 through 01/09/02 and ending Dates of 9/21/03 or 10/05/03.

Certification Status Abbreviations: C – Certified, PC - Provisionally Certified, NC - Not Certified, A – Acceptable, NA – Not Acceptable, NAP – Not Approved

2003 Home State Certificate Information		2003 West Virginia Certification Status	
Home-State Certified Analytes	Method Numbers	WV Certified Method Nos.	Comments/Explanation
Pesticides			
Group I			
Endrin	508	508	Certified
Lindane	508	508	Certified
Heptachlor	508	508	Certified
Heptachlorepoxyde	508	508	Certified
Hexachlorobenzene	508	508	Certified
Hexachlorocyclo- pentadiene	508	508	Certified
Methoxychlor	508	508	Certified
Toxaphene	508	508	Certified
Chlordane	508	508	Certified
Group II			
Alachlor	507	507	Certified
Atrazine	507	507	Certified
Simazine	507	507	Certified

Laboratory Certification Status Review

Change in Certification Status

Review and Effective Date: April 23, 2003

Laboratory Name: Aqua Tech, Melmore (Ohio) Lab

Certification Status Abbreviations: C – Certified, PC - Provisionally Certified, NC - Not Certified, A – Acceptable, NA – Not Acceptable, NAP – Not Approved

2003 Home State Certificate Information		2003 West Virginia Certification Status	
Home-State Certified Analytes	Method Numbers	WV Certified Method Nos.	Comments/Explanation
Group III			
Aldicarb	531.1	531.1	Certified
Aldicarb Sulfone	531.1	531.1	Certified
Aldicarb Sulfoxide	531.1	531.1	Certified
Carbofuran	531.1	531.1	Certified
Oxamyl (Vydate)	531.1	531.1	Certified
Group IV			
PCBs (as Aroclors)	508	508	Certified
PCBs (as decachloro- biphenyl)	508A	508A	Certified
Group V			
Diquat	549.2	549.2	Certified
Group VI			
Endothall	548.1	548.1	Certified
Group VII			
Glyphosate	547	547	Certified

Laboratory Certification Status Review

Laboratory Name: Reliance Labs

Home State: WV

Review Date: 11/15/2002

Type of Certification: Via Home State Evaluation

Current Certificate Effective Dates: 1/1/2002-12/31/2002

Abbreviations used: NA - Not Acceptable, A – Acceptable, C – Certified, NC – Not Certified,
NAP – Not Approved

2002 Home State Certificate Information		2003 West Virginia Certification Status	
Home-State Certified Analytes	Method Numbers	WV Certified Method Nos.	Comments/Explanation
Trace Metals			
Group I	PC	NC	No A '02 WS Results for Copper or Lead
Group II	PC	NC	No A '02 WS Results for any Grp II Metals

Laboratory Certification Status Review

Laboratory Name: Reliance Labs

Home State: WV

Abbreviations used: NA - Not Acceptable, A – Acceptable, NC – Not Certified, PC – Provisionally Certified

2002 Home State Certificate Information		2003 West Virginia Certification Status	
Home-State Certified Analytes	Method Numbers	WV Certified Method Nos.	Comments/Explanation
Inorganics			
Group I			
Nitrate-N	PC	NC	No A '02 WS Results
Group II			
Nitrite-N	PC	NC	No A '02 WS Results
Group III			
Fluoride	PC	NC	No A '02 WS Results

Laboratory Certification Status Review

Review Date: 11/15/2002

Laboratory Name: Reliance Laboratories

Home State: WV

Type of Certification: Home State Evaluation

Abbreviation: NA - Not Acceptable, A - Acceptable, C - Certified, PC - Provisionally Certified, NC - Not Certified, NAP - Not Approved

2002 Home State Certificate Information		2003 West Virginia Certification Status	
Home-State Certified Analytes	Method Numbers	WV Certified Method Nos.	Comments/Explanation
(THMs) Trihalomethanes			
Chloroform	PC	NC	NC, WS Result NA
Bromodichloro- methane	PC	524.2	Certified
Chlorodibromo- methane	PC	524.4	Certified
Bromoform	PC	524.2	Certified
Total THMs	PC	NC	NC, WS Result NA

Office of Ground Water and Drinking Water
Technical Support Center

July 24, 2002

Labik
ant

Dr. Andrea Labik, Sc.D., Director
Office of Laboratory Services
West Virginia Department of Health and Human Resources
167 11th Avenue
South Charleston, WV 25303

Dear Dr. Labik:

Our Office held its most recent offering of our Drinking Water Laboratory Certification Course for Chemistry on June 17-21, 2002. I am pleased to recommend the following individual be certified as a member of West Virginia's certification team for organic contaminants/analyses:

Larry A. Duffield
WV Bureau of Public Health
Environmental Chemistry Laboratory
4710 Chimney Drive, Suite G
Charleston, WV 25302

Appropriate documentation is enclosed for your signature and forwarding to Mr. Duffield. If you have any questions or concerns, you may contact Patricia Hurr of my staff on 513-569-7678.

Sincerely yours,

Gregory J. Carroll
Chief, Technical Support Center

Enclosures: As stated

✓cc: Charles Jones, Jr., USEPA, Region 3



Wayne Morganroth
<waynemorganroth@w
vdhr.org>

To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc:
Subject: Certification Status Tracking Sheets

05/03/2002 03:40 PM

Lab. Cert. Tracking

Joe,

I am forwarding a couple of examples of our new laboratory certification tracking sheets for your information. These have been developed using Microsoft's Office '97 Word program. I am also including an hypothetical example for "XYZ Environmental Laboratory" to illustrate how we will be using the sheets to monitor a laboratory's evolving certification status. It probably will not show up on the e-mail copy, but the entry for each method used for an analyte will be in blue as a means of having it stand out (especially from lines that are for other methods that are not used for an analyte).

Charlotte and I have been working on a Certification SOP for our program. Either on my way home from work this afternoon or tomorrow, Saturday, I will be mailing you a hard copy of our efforts. It presently does not include method check lists, but we can forward these if needed. We are sending a hard copy since we do not have a coherent copy on disk
Wayne



HAA5 Certification Status Tracking Sheet.doc



Trace Metals Certification Status Sheet.doc



XYZ ENV Trace Metals Certification Status Sheet.doc

(?) in use yet?

Jim

2002 LABORATORY CERTIFICATION STATUS SHEET

Laboratory:
Last On-Site:

Home State: _____ **QA Officer:** _____
Effective Dates **Home State Certificate:** _____

[illegible]

2002 LABORATORY CERTIFICATION STATUS SHEET

Laboratory:
Last On-Site:

Home State: QA Officer:
Effective Dates Home State Certificate:

Analyte	Home State		WS Studies: Results and Certified Status						Over-all Status	
	Jan 1, '02 Status	Method Numbers	Primary A – Date	Result	Make-up B – Date	Result	Make-up C – Date	Result	Review Date	Cert'n. Status
TRACE METALS										
Group I										
Lead		200.8								
		200.9								
		SM 3113 B								
Copper		200.7								
		200.8								
		200.9								
		SM 3113 B								
		SM 3111 B								
		SM 3120 B								
Group II										
Antimony		200.8								
		200.9								
		SM 3113 B								
Arsenic		200.7								
		200.8								
		200.9								
		SM 3120 B								
		SM 3113 B								
		SM 3114 B								
Barium		200.7								
		200.8								
		SM 3120 B								
		SM 3111 D								
		SM 3113 B								

2002 LABORATORY CERTIFICATION STATUS SHEET

Laboratory:
Last On-Site:

Home State: QA Officer:
Effective Dates Home State Certificate:

Analyte	Home State		WS Studies: Results and Certified Status						Over-all Status	
	Jan 1, '02 Status	Method Numbers	Primary A – Date	Result	Make-up B – Date	Result	Make-up C – Date	Result	Review Date	Cert'n. Status
TRACE METALS										
Group II Cont'd										
Beryllium		200.7								
		200.8								
		200.9								
		SM 3120 B								
		SM 3113 B								
Cadmium		200.7								
		200.8								
		200.9								
		SM 3113 B								
Chromium		200.7								
		200.8								
		200.9								
		SM 3120 B								
		SM 3113 B								
Mercury		245.1								
		245.2								
		200.8								
		SM 3112 B								
Selenium		200.8								
		200.9								
		SM 3114 B								
		SM 3113 B								
Thallium		200.8								
		200.9								

2002 TRACE METALS LABORATORY CERTIFICATION STATUS SHEET

Laboratory: XYZ Environmental Laboratory Home State: MA QA Officer: Miles Standish
 Last On-Site: October 10, 2001 Effective Dates Home State Certificate: November 15, 2001 – November 14, 2003

Analyte	Home State		WS Studies: Results and Certified Status						Over-all Status	
	Jan 1, '02 Status	Method Numbers	Primary A – Date	Result	Make-up B – Date	Result	Make-up C – Date	Result	Review Date	Cert'n. Status
TRACE METALS			ERA WS 66 3-25-02							
Group I										
Lead		200.8								
		200.9								
	Certified	SM 3113 B		Accept.					3-25-02	Certified
Copper		200.7								
		200.8								
		200.9								
	Certified	SM 3113 B		Accept.					3-25-02	Certified
		SM 3111 B								
		SM 3120 B								
Group II										
Antimony	Certified	200.8		Not Accept.					3-25-02	Prov Cert
		200.9								
		SM 3113 B								
Arsenic		200.7								
		200.8								
		200.9								
		SM 3120 B								
	Certified	SM 3113 B		Accept					3-25-02	Certified
		SM 3114 B								
Barium		200.7								
		200.8								
		SM 3120 B								
	Certified	SM 3111 D		Accept					3-25-02	Certified
		SM 3113 B								

2002 LABORATORY CERTIFICATION STATUS SHEET

Laboratory:
Last On-Site:

Home State:
Effective Dates Home State Certificate:

QA Officer:

Analyte	Home State		WS Studies: Results and Certified Status						Over-all Status	
	Jan 1, '02 Status	Method Numbers	Primary A – Date	Result	Make-up B – Date	Result	Make-up C – Date	Result	Review Date	Cert'n. Status
TRACE METALS			ERA WS66							
			3-25-02							
Group II Cont'd										
Beryllium		200.7								
	Certified	200.8		Accept.					3-25-02	Certified
		200.9								
		SM 3120 B								
		SM 3113 B								
Cadmium		200.7								
		200.8								
		200.9								
	Certified	SM 3113 B		Accept.					3-25-02	Certified
Chromium	Certified	200.7		Accept.					3-25-02	Certified
		200.8								
		200.9								
		SM 3120 B								
		SM 3113 B								
Mercury	Certified	245.1		Accept.					3-25-02	Certified
		245.2								
		200.8								
		SM 3112 B								
Selenium	Certified	200.8		Accept.					3-25-02	Certified
		200.9								
		SM 3114 B								
		SM 3113 B								
Thallium		200.8								
	Certified	200.9		Accept.					3-25-02	Certified

Joe Slayton

08/22/2002 08:54 PM

To: Wayne Morganroth <waynemorganroth@wvdhhr.org>
cc: Charlotte Billingsley <charlottebillingsley@wvdhhr.org>
Subject: Re: Request for our Quality Assurance Manual. [1]

Wayne just want to clarify about which manuals. I have hardcopies of : "Manual of Quality Assurance 2000" (Office of Laboratory Services Environmental Chemistry Section); and "Standard Operating Procedures EPA/SDWA Laboratory Certification" (Office of Laboratory Services Environmental Chemistry Section). Is either of these available electronically? Please do not go to any extra trouble but if they are available please forward.

Wayne Morganroth <waynemorganroth@wvdhhr.org>



Wayne Morganroth
<waynemorganroth@wvdhhr.org>

08/22/02 03:49 PM

To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc: Charlotte Billingsley <charlottebillingsley@wvdhhr.org>
Subject: Reuest for our Quality Assurance Manual.

Joe,

Charlotte Billilngsley has asked me to respond to your 8-20-02 e-mail request for the referenced manual. We think that a printed copy of it was mailed to you some time ago. A month ago Charlotte finished a revision of this manual (revision date of 7-10-02). Charlotte doesn't think we have a coherent copy of the manual on disk(s). More than one person has worked on the typing of it and over a period of two years, so it would be difficult and time-consuming to reproduce it in an electronic format. The best way would entail a complete re-typing. If it would be of utility to you we can send a printed copy. If this will suffice at all let Charlotte or I know and we will take the necessary steps to send you a copy. [Signature]

Wayne

Ex. 5 - Deliberative



Wayne Morganroth
<waynemorganroth@w
vdhhr.org>

08/20/2002 08:37 AM

To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc:
Subject: Re: Additional Topics

Ex. 5 - Deliberative

Joe,

Larry Duffield, chemistry and Tom Ong, microbiology are both scheduled to be in attendance at the COs meeting next month. Larry told me that he has previously e-mailed to inform you that he would be in attendance, but to be sure this information reaches you, a second epistle is in order. hope you have a good, informative meeting. Wayne

Ex. 5 - Deliberative

>>> <Slayton.Joe@epamail.epa.gov> 08/19/02 06:44PM >>>
Most of the R3 States indicated in their yearly questionnaire-- issues with PTs. The good news is that PTs are the first major topic on the CO's meeting Agenda. Carol Madding you indicated it would be helpful to have specific questions. Some I have heard include: Who specifically in EPA is responsible for oversight of the PT program for Water Supply; the format of provider reports is all over the board and items like "date" (date of analysis or date of study completion) are not clear; will the Agency be providing any tools to help CO/s and State Programs track PT results...it has greatly increased the work and has had very negative impacts on keeping on schedule with on-sites and certification updates/reports (Mary Stancavage--sorry to put you on the spot...have you had a chance to test try the PT provider software? If so would you share you experience--Richard Sheibley same for PA DEP ?); Does anyone (COs) have a fixed schedule for PTs that helps/works?.

One topic for the general discussion (on the Agenda at the end of the day) --"Technical Notes" produced by OGWDW--COs indicate clarification/discussion on their official status would be helpful, e.g., should they be considered additions to official Agency Methods.

Ok folks: Have not heard for WV or PA--can some of you be here? If not do we have commitment for folks to be on the phone--name names please.



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Bob Wise
Governor

Paul L. Nusbaum
Secretary

To: All Chemistry Laboratories Certified for Drinking Water
From: West Virginia Chemistry Laboratory Certification Program
Re: Certification Program Reorganization

The Chemistry Laboratory Certification Program operated by West Virginia for the USEPA/SDWA is in the process of being reorganized. To complete the reorganization, all laboratories currently certified to perform chemical analyses under the USEPA Safe Drinking Water Act (SDWA), are requested to update information concerning their testing capabilities.

Enclosed is a set of worksheets to expedite the update. Please complete all sections of the forms that apply to your laboratory. It is very important that you circle the method or methods used by your laboratory in testing for each analyte for which you are presently certified.

Completed forms are to be returned by **SEPTEMBER 10, 2002** to:

Dr. Wayne Morganroth, Chief Certification Officer
Office of Laboratory Services
Environmental Chemistry Laboratory
4710 Chimney Drive, Suite G
Charleston, WV 25302.

A return addressed envelope has been enclosed for your convenience.

PLEASE NOTE THE FOLLOWING INFORMATION CONCERNING PT STUDIES:

EPA and West Virginia accept all commercial proficiency testing programs certified by the National Institute of Standards and Technology (NIST) utilizing the National Standards for Water Proficiency Testing Studies and approved by the National Voluntary Laboratory Approval Program (NVLAP). Laboratories are to instruct the PT provider to send copies of results to the Office of Laboratory Services, Environmental Chemistry Laboratory, at the address given below.

Beginning January 1, 2003 laboratories must participate in a Drinking Water Proficiency Testing (WS PT) Study during the first three months of the calendar year, i.e. January, February, or March.

During this first quarter period, laboratories must analyze WS PT samples for all parameters (by all methods used in analyzing for each parameter) for which they hold, or are seeking, certification. If a laboratory fails to demonstrate satisfactory performance during that period, it is the laboratory's responsibility to assure the certifying authority, by September 30 of each year, that they have received at least one "acceptable" WS PT result for all certifiable parameters and by all methods for which they hold, or are seeking, certification. Laboratories may participate in as many PTs as necessary during the make-up

Office of Laboratory Services, Environmental Chemistry Lab
4710 Chimney Drive, Suite G, Charleston, WV 25302
Ph. 304-558-0197 FAX 304-558-4143

period. If acceptable performance for all parameters (for which certification is sought) is not achieved by October 1, the certification for the "missed" Parameter(s) is (are) deemed "Not Certified" or "Provisionally Certified" depending on the severity of the problems. The certification status will remain unchanged until the issuance of the next PT update report which must occur no later than the first quarter of the next year.

The routine cycle for certification status based on PT studies will become effective and begin on January 1, 2003. Certification status will be updated and made available to each laboratory prior to the request of the laboratory for certification renewal. Certification is routinely valid for one year, but may be updated as necessary due to changes in the laboratory, i.e. changes in key personnel (such as the laboratory director or QA officer, etc.), deficiencies found during an on-site assessment, unacceptable performance on PT studies, etc.

It is the responsibility of the laboratory director to provide written corrective action plans to the State Certification Officer within 30 days of the receipt of an unacceptable proficiency testing result for one or more chemical parameters. Make-up studies for failed results are required for continued certification. It is the responsibility of the laboratory to purchase make-up study proficiency samples and to ensure the forwarding of results for these samples to the State Certification Officer *by the PT Provider*.

Questions concerning the proficiency testing policy should be directed to Dr. Wayne Morganroth at (304) 558-0197.

State of West Virginia
Certification Program Reorganization
Information Packet

LABORATORY INFORMATION

Name: _____

Address:

Street _____

City _____ **State** ____ **Zip Code** _____

Certification Contact Person _____

Telephone Number _____

FAX Number _____

E-mail Address _____

Date _____

**ON THE FOLLOWING PAGES (4 THROUGH 12) PLEASE CIRCLE
BOTH THE ANALYTE YOU WISH TO BE CERTIFIED FOR AND THE
ANALYTICAL METHOD(S) USED**

Excerpted from **Manual for the Certification of Laboratories Analyzing Drinking Water, Fourth Edition**. Approved Methods for Primary Inorganic Chemicals, Parameters in the Lead and Copper Rule, Sodium and Turbidity [141.23(k)(1)]

Contaminant	Methodology	EPA	ASTM ¹	SM ⁴	Other
Antimony	ICP-MS	200.8 ²			
	Hydride-AA		D3697-92		
	AA-Platform	200.9 ²			
	AA-Furnace			3113B	
Arsenic	ICP	200.7 ²		3120B	
	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
	AA-Furnace		D2972-93C	3113B	
	Hydride-AA		D2972-93B	3114B	
Asbestos	TEM	100.1 ⁹			
	TEM	100.2 ¹⁰			
Barium	ICP	200.7 ²		3120B	
	ICP-MS	200.8 ²			
	AA-Direct			3111D	
	AA-Furnace			3113B	
Beryllium	ICP	200.7 ²		3120B	
	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
	AA-Furnace		D3645-93B	3113B	
Cadmium	ICP	200.7 ²			
	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
	AA-Furnace			3113B	
Chromium	ICP	200.7 ²		3120B	
	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
	AA-Furnace			3113B	

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS:

Contaminant	Methodology	EPA	ASTM ¹	SM ⁴	Other
Cyanide	Man. Distillation followed by:			4500-CN-C	
	Spec., Amenable		D2036-91B	4500-CN-G	
	Spec. Manual		D2036-91A	4500-CN-E	I-3300-85 ³
	Semi-auto	335.4 ⁶			
	Ion Sel. Elec. (ISE)			4500-CN-F	
Fluoride	Ion Chromatography	300.0 ⁶	D4327-91	4110B	
	Manual Distill. SPADNS			4500-F-B,D	
	Manual ISE		D1179-93B	4500-F-C	
	Automated ISE				380-75WE ¹¹
	Auto. Alizarin			4500-F-E	129-71W ¹¹
Mercury	Man. Cold Vapor	245.1 ¹	D3223-91	3112B	
	Auto. Cold Vapor	245.2 ¹			
	ICP-MS	200.8 ²			
Nitrate	Ion Chromatography	300.0 ⁶	D4327-91	4110B	B-1011 ⁸
	Auto. Cd Reduction	353.2 ⁶	D3867-90A	4500-NO ₃ -F	
	Ion Selective Elec.			4500-NO ₃ -D	601 ⁷
	Man. Cd Reduction		D3867-90B	4500-NO ₃ -E	
Nitrite	Ion Chromatography	300.0 ⁶	D4327-91	4110B	B-1011 ⁸
	Auto. Cd Reduction	353.2 ⁶	D3867-90A	4500-NO ₃ -F	
	Man. Cd Reduction		D3867-90B	4500-NO ₃ -E	
	Spectro.			4500-NO ₂ -B	
Selenium	Hydride-AA		D3859-93A	3114B	
	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
	AA-Furnace		D3859-93B	3113B	

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS

Contaminant	Methodology	EPA	ASTM ¹	SM ⁴	Other
Thallium	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
Lead	AA-Furnace		D3559-90D	3113B	
	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
Copper	AA-Furnace		D1688-90C	3113B	
	AA-Direct		D1688-90A	3111B	
	ICP	200.7 ²		3120B	
	ICP-MS	200.8 ²			
	AA-Platform	200.9 ²			
pH	Electrometric	150.1 ¹	D1293-84	4500-11 ⁴ -B	
		150.2 ¹			
Conductivity	Conductance		D1125-91A	2510B	
Calcium	EDTA titration		D511-93A	3500-Ca-D	
	AA-Direct		D511-93B	3111B	
	ICP	200.7 ²		3120B	
Alkalinity	Titration		D1067-92B	2320B	
	Elec. Titration				I-1030-85 ³
Ortho-phosphate unfiltered, no digestion or hydrolysis	Color, automated ascorbic acid	365.1 ⁶		4500-P-F	
	Color, ascorbic acid		D515-88A	4500-P-E	
	Color, phosphomolybdate				I-1601-85 ³
	Auto Segmented flow				I-2601-90 ³
	Auto discrete				I-2598-85 ³
	Ion Chromatography	300.0 ⁶	D4327-91	4110	

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS

Contaminant	Methodology	EPA	ASTM ³	SM ⁴	Other
Silica	Color, molybdate blue				I-1700-85 ⁵
	Auto Segmented flow				I-2700-85 ⁵
	Color		D859-88		
	Molybdosilicate			4500-Si-D	
	Heteropoly blue			4500-Si-E	
	Auto. Molybdate reactive silica			4500-Si-F	
	ICP	200.7 ²		3120B	
Temperature	Thermometric			2550B	
Sodium	ICP	200.7 ²			
	AA-Direct			3111B	
Turbidity	Nephelometric ⁶	180.1		2130B	GLI Method 2 ¹²

FOOTNOTES

¹ Methods 150.1, 150.2 and 245.2 are available from US EPA, EMSL, Cincinnati, OH 45268. The identical methods were formerly in "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1983.

² "Methods for the Determination of Metals in Environmental Samples - Supplement 1," EPA-600/R-94-111, May 1994. Available at NTIS, PB 94-184942.

³ *Annual Book of ASTM Standards*, Vols. 11.01 and 11.02, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

⁴ *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, American Public Health Association, 1015 Fifteenth Street NW, Washington, D.C. 20005.

⁵ Available from Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225-0425.

⁶ "Methods for the Determination of Inorganic Substances in Environmental Samples," EPA-600/R-93-100, August 1993. Available at NTIS, PB94-121811.

⁷ Technical Bulletin 601 "Standard Method of Test for Nitrate in Drinking Water," July 1994, PN 221890-001, ATI Orion, 529 Main Street, Boston, MA 02129. This method is identical to Orion WeWWG/5880, which is approved for nitrate analysis. ATI Orion republished the method in 1994, and renumbered it as 601, because the 1985 manual "Orion Guide to Water and Wastewater Analysis," which contained WeWWG/5880, is no longer available.

⁸ Method B-1011, "Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography," Millipore Corporation, Waters Chromatography Division, 34 Maple Street, Milford, MA 01757.

⁹ Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water," EPA-600/4-83-043, EPA, September 1983. Available at NTIS, PB 83-260471.

¹⁰ Method 100.2, "Determination of Asbestos Structure Over 10um in length in Drinking Water," EPA-600/R-94-134, June 1994. Available at NTIS, PB 94-201902.

¹¹ Industrial Method No. 129-71W, "Fluoride in Water and Wastewater," December 1972, and Method No. 380-75WE, "Fluoride in Water and Wastewater," February 1976, Technicon Industrial Systems, Tarrytown, NY 10591.

¹² GLI Method 2, "Turbidity," November 2, 1992, Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, Wisconsin 53223.

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS

Excerpted from Manual for the Certification of Laboratories Analyzing Drinking Water, Fourth Edition. Approved Methods for Primary Organic Chemicals,[141.23141.24(e)]

Contaminant	Method ³
Benzene	502.2, 524.2
Carbon tetrachloride	502.2, 524.2, 551
Chlorobenzene	502.2, 524.2
1,2-Dichlorobenzene	502.2, 524.2
1,4-Dichlorobenzene	502.2, 524.2
1,2-Dichloroethane	502.2, 524.2
cis-1,2-Dichloroethylene	502.2, 524.2
trans-1,2-Dichloroethylene	502.2, 524.2
Dichloromethane	502.2, 524.2
1,2-Dichloropropane	502.2, 524.2
Ethylbenzene	502.2, 524.2
Styrene	502.2, 524.2
Tetrachloroethylene	502.2, 524.2, 551
1,1,1-Trichloroethane	502.2, 524.2, 551
Trichloroethylene	502.2, 524.2, 551
Toluene	502.2, 524.2
1,2,4-Trichlorobenzene	502.2, 524.2
1,1-Dichloroethylene	502.2, 524.2
1,1,2-Trichloroethane	502.2, 524.2
Vinyl chloride	502.2, 524.2
Xylenes (total)	502.2, 524.2
2,3,7,8-TCDD (Dioxin)	1613
2,4-D	515.1, 515.2, 555
Alachlor	505 ¹ , 507, 508.1, 525.2
Atrazine	505 ¹ , 507, 508.1, 525.2
Benzo(a)pyrene	525.2, 550, 550.1
Carbofuran	531.1, 6610
Chlordane	505, 508, 508.1, 525.2
Dalapon	515.1, 552.1
Di(2-ethylhexyl)adipate	506, 525.2

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS

Contaminant	Method ¹
Di(2-ethylhexyl)phthalate	506, 525.2
Dibromochloropropane (DBCP)	502.1, 551
Dinoseb	515.1, 515.2, 555
Diquat	549.1
Endothall	548.1
Endrin	505, 508, 508.1, 525.2
Ethylene dibromide (EDB)	504.1, 551
Glyphosate	547, 6651
Heptachlor	505, 508, 508.1, 525.2
Heptachlor epoxide	505, 508, 508.1, 525.2
Hexachlorobenzene	505, 508, 508.1, 525.2
Hexachlorocyclopentadiene	505, 508, 508.1, 525.2
Lindane	505, 508, 508.1, 525.2
Methoxychlor	505, 508, 508.1, 525.2
Oxamyl	531.1, 6610
PCBs (as decachlorobiphenyl) ² (as Aroclors)	508A 505, 508
Pentachlorophenol	515.1, 515.2, 525.2, 555
Picloram	515.1, 515.2, 555
Simazine	505 ¹ , 507, 508.1, 525.2
2,4,5-TP (Silvex)	515.1, 515.2, 555
Toxaphene	505, 508, 525.2
Total Trihalomethanes	502.2, 524.2, 551

¹ A nitrogen-phosphorus detector should be substituted for the electron capture detector in Method 505 (or another approved method should be used) to determine alachlor, atrazine and simazine, if lower detection limits are required.

² PCBs are qualitatively identified as Aroclors and measured for compliance purposes as decachlorobiphenyl using Method 508A.

¹ Methods 502.2, 505, 507, 508, 508A, 515.1 and 531.1 are in Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88-039, December 1988, Revised, July 1991. Methods 506, 547, 550, 550.1 and 551 are in Methods for the Determination of Organic Compounds in Drinking Water - Supplement I, EPA-600-4-90-020, July 1990. Methods 515.2, 524.2, 548.1, 549.1, 552.1 and 555 are in Methods for the Determination of Organic Compounds in Drinking Water - Supplement II, EPA-600/R-92-129, August 1992. Method 1613, Tetra-through Octa-Chlorinated Dioxins and Furans by Isotopic Dilution HRGC/HRMS, EPA-81/B-94-003, October 1994. These documents are available from the National Technical Information Service, NTIS PB91-231480, PB91-146027 and PB92-207703 and PB95-104774, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll free number is 800-553-6847. Method 1613 is available from USEPA Office of Water Resource Center (RC-4100), 401 M Street SW, Washington, D.C. 20460. The phone number is 202-260-7786. EPA Methods 504.2, 508.1 and 525.2 are available from US EPA NERL, Cincinnati, OH 45268. The phone number is (513) 569-7586. Method 6651 is contained in the 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992, and Method 6610 is contained in the Supplement to the 18th Edition of Standard Methods for the Examination of Water and Wastewater, 1994, American Public Health Association, 1015 Fifteenth Street NW, Washington, D.C. 20005.

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS

Excerpted from Manual for the Certification of Laboratories Analyzing Drinking Water, Fourth Edition. Approved Methods for "Unregulated" Contaminants,[141.40]

"Unregulated" VOC Contaminants	Method
Chloroform	502.2, 524.2, 551
Bromodichloromethane	502.2, 524.2, 551
Bromoform	502.2, 524.2, 551
Chlorodibromomethane	502.2, 524.2, 551
Bromobenzene	502.2, 524.2
Bromomethane	502.2, 524.2
Chloroethane	502.2, 524.2
Chloromethane	502.2, 524.2
o-Chlorotoluene	502.2, 524.2
p-Chlorotoluene	502.2, 524.2
Dibromomethane	502.2, 524.2
m-Dichlorobenzene	502.2, 524.2
1,1-Dichloroethane	502.2, 524.2
1,3-Dichloropropane	502.2, 524.2
2,2-Dichloropropane	502.2, 524.2
1,1-Dichloropropene	502.2, 524.2
1,3-Dichloropropene	502.2, 524.2
1,1,2,2-Tetrachloroethane	502.2, 524.2
1,1,1,2-Tetrachloroethane	502.2, 524.2
1,2,3-Trichloropropane	502.2, 524.2, 504.1
State Discretionary Contaminants	Methods
Bromochloromethane	502.2, 524.2
n-Butylbenzene	502.2, 524.2
sec-Butylbenzene	502.2, 524.2
tert-Butylbenzene	502.2, 524.2
Dichlorodifluoromethane	502.2, 524.2
Fluorotrichloromethane	502.2, 524.2
Hexachlorobutadiene	502.2, 524.2
Isopropylbenzene	502.2, 524.2
Naphthalene	502.2, 524.2
n-Propylbenzene	502.2, 524.2

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS

State Discretionary Contaminants	Method		
1,2,3-Trichlorobenzene	502.2, 524.2		
1,2,4-Trimethylbenzene	502.2, 524.2		
1,3,5-Trimethylbenzene	502.2, 524.2		
"Unregulated" SOC Contaminants	Method		
Aldicarb	531.1, 6610*		
Aldicarb sulfone	531.1 6610*		
Aldicarb sulfoxide	531.1, 6610*		
Aldrin	505, 508, 508.1, 525.2		
Butachlor	507, 525.2		
Carbaryl	531.1, 6610*		
Dicamba	515.1, 515.2, 555		
Dieldrin	505, 508, 508.1, 525.2		
3-Hydroxycarbofuran	531.1, 6610*		
Methomyl	531.1, 6610*		
Metolachlor	507, 525.2, 508.1		
Metribuzin	507, 525.2, 508.1		
Propachlor	508, 508.1, 525.2		
"Unregulated" Inorganic Contaminants	EPA Method	ASTM	SM
Nickel	200.7		3120B
	200.8		
	200.9		
			3111B
			3113B
Sulfate	300.0	D4327-91	4110B
	375.2		4500-SO ₄ -F
			4500-SO ₄ -C,D

* A Standard Methods method.

Sources for the Standard Methods and ASTM sulfate methods are referenced above under methods for inorganic chemicals. The EPA methods are contained in "Methods for the Determination of Inorganic Substances in Environmental Samples," EPA-600/R-93-100, August 1993, which is available at NTIS, PB94-121811.

PLEASE CIRCLE THE METHOD(S) USED FOR ANALYZING THESE CONTAMINANTS

Excerpted from Manual for the Certification of Laboratories Analyzing Drinking Water, Fourth Edition. Recommended Methods for Secondary Drinking Water Contaminants, [143.3]

Contaminant	EPA	ASTM ¹	SM ²	Other
Aluminum	200.7 ³		3120B	
	200.8 ³		3113B	
	200.9 ³		3111D	
Chloride	300.0 ⁴	D4327-91	4110B	
			4500-Cl-D	
Color			2120B	
Foaming Agents			5540C	
Iron	200.7 ³		3120B	
	200.9 ³		3111B	
			3113B	
Manganese	200.7 ³		3120B	
	200.8 ³		3111B	
	200.9 ³		3113B	
Odor			2150B	
Silver	200.7 ³		3120B	I-3720-85 ⁵
	200.8 ³		3111B	
	200.9 ³		3113B	
Sulfate	300.0 ⁴	D4327-91	4110B	
	375.2 ⁴		4500-SO ₄ -F	
			4500-SO ₄ -C,D	
TDS			2540C	
Zinc	200.7 ³		3120B	
	200.8 ³		3111B	

FOOTNOTES

¹ *Annual Book of ASTM Standards*, Vols. 11.01 and 11.02, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

² *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, American Public Health Association, 1015 Fifteenth Street NW, Washington, D.C. 20005.

³ "Methods for the Determination of Metals in Environmental Samples - Supplement I", EPA-600/R-94-111, May 1994. Available at NTIS, PB94-184942.

⁴ "Methods for the Determination of Inorganic Substances in Environmental Samples," EPA-600/R-93-100, August 1993. Available at NTIS, PB94-121811.

⁵ Available from Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225-0425.



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Bob Wise
Governor

Paul L. Nusbaum
Secretary

May 9 , 2001

Dr. Wayne Morganroth, Supervisor
Environmental Chemistry Section
4710 Big Chimney Drive, Suite G
Charleston, West Virginia 25302

Re: Written Summary of Problems

As you know we have all worked very hard over the last several months to improve the image of the Environmental Chemistry Laboratory. Much progress has been made. The technical staff has worked very hard to improve the turn-around-time and there has been tremendous improvement in attitudes and cooperation. Relationships with the Office of Environmental Health Services have improved and Dr. Taylor has been instrumental in securing funds to help the Environmental Chemistry Section to stay operational. In addition, Dr. Labik has agreed to hire a full-time office assistant.

We believe that the Big Chimney facility is in a better position now than it has been for some time. The employment of an office assistant will help to relieve you of the secretarial duties and leave you with more time to attend to technical and program duties.

As the supervisor of the Chemistry Section you have tremendous responsibility. I believe that recently you have been overwhelmed by the enormity of your responsibilities . On May 2, 2001 I discovered that the majority of tests performed since the last week of February have not be reported to the customers. The technical staff completed many of these tests within two days of receiving the sample. Your staff has worked very hard to improve turn-around-time so that they can keep their jobs. Failure to report the test results in a timely fashion makes their efforts futile.

Two weeks ago I reported the laboratory's average turn-around-time to OEHS based on data from November, 2000 thru January, 2001. The turn-around-time was excellent except for a delay in the time from completion of the test to the time it was reported. At the end of January, 2001, we discussed that the only problem with the turn-around-time was your ability to get the reports logged and mailed to the clients . At that time the delay averaged 5 - 7 days. We had a discussion about improving this time and you believed that clerical assistance would help to get reports out sooner. I had no idea how bad the situation had become until I looked at the log book last week on May 2, 2001. You indicated to me that it was in bad shape because I had said you needed to work on the Laboratory Certification Program and that you needed large blocks of uninterrupted time to do this work. You again told me that you cannot do everything and keep the work timely.

BUREAU FOR PUBLIC HEALTH
OFFICE OF LABORATORY SERVICES
167 11th Avenue
South Charleston, West Virginia 25303-1137

Phone: (304) 558-3530

FAX: (304) 558-2006

Wayne Morganroth
June 9, 2001
Page Two

Joe Slayton at the Region 3 EPA office has asked you for an update on lab certifications. Your report shows that some laboratories have not had an on-site inspection since 1995. I did not believe that Mr. Slayton was going to be happy when he saw your report.

The fact that you seem to be overwhelmed as the supervisor is also exemplified by your failure to send certificates of approval to the laboratories that West Virginia approves in a timely manner. This information should be out by January 1 of each year. Under no circumstances should the certificates be sent any later than the end of February. On May 3, 2001, the certificates which had been printed were still not in the mail. Failure to approve laboratories in a timely manner is very obvious now that the list is on the Bureau for Public Health's web page.

These actions on your part are very serious and do not present a good image of the Bureau, the Office of Laboratory Services and puts the Safe Drinking Water Program in jeopardy. This fact was confirmed this morning (May 9, 2001) by e-mails forwarded to me and to Dr. Labik from OEHS. Copies of these are attached. Joe Slayton's memorandum was forwarded by Jason Gambatese to Vic Wilford indicating, that Mr. Slayton has informed his management within EPA of the status of West Virginia's Chemistry Laboratory Certification Program. Barbara Taylor's e-mail and attachment focus on the failure of the laboratory to report laboratory results in a timely manner.

Months of effort to improve relationships with the Office of Environmental Health Services have been destroyed and placed Dr. Labik in a very bad situation.

Because of these circumstances, you are requested to meet with me and Dr. Labik at OLS in South Charleston on May 9, 2001 to discuss these situations. At that time you will receive this letter.

Charlotte J. Billingsley
Temporary Associate Director

Andrea M. Labik, Sc.D.
Director



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Bob Wise
Governor

Paul L. Nusbaum
Secretary

MEMORANDUM

Date: March 19, 2002

To: Dr. Andrea Labik

From: Charlotte Billingsley

Subject: **Administrative Audit of the Environmental Chemistry Laboratory Certification Program**

Since the initial audit of the Environmental Chemistry Certification Program, the entire program has been re-organized and revised. The following progress has been made:

1. All certified laboratory files have been reviewed, organized, and updated;
2. The records format for tracking laboratory certification is being revised and should be completed in early April, 2002;
3. Certification status of all laboratories has been verified and certificates to all laboratories should be in the mail by March 22, 2002. At my request, Tom Ong is e-mailing to Joe Slayton a copy of the 2002 certified labs;
4. The 2002 certified lab list of out-of-state and in-state laboratories will be posted on the website as soon as possible;
5. West Virginia has eleven (11) in-state certified laboratories.

BUREAU FOR PUBLIC HEALTH
OFFICE OF LABORATORY SERVICES
167 11th Avenue
South Charleston, West Virginia 25303-1137

Phone: (304) 558-3530

FAX: (304) 558-2006

Status of on-site laboratory surveys for in-state (WV) laboratories is as follows:

LIST OF ON-SITE LABORATORY SURVEYS

Name of Laboratory	Date On-Site
WV-Am. Water, Charleston	On-site Performed 6-18 & 6-28-01
Analabs, Inc., Beckley	On-site Performed 7-17 & 7-19, 01
Clarksburg Water Board	On-site Performed 7-31-01
Reliance Labs, Hedgesville	On-site Performed 7-27-01
Special Analytical Services	On-site Performed 8-08-01
Sturm Env. Services, Bridgeport	On-site Performed 9-18 & 9-20, 01
Wheeling Water Treatment	On-site Performed 9-26-01
Reliance Labs, Bridgeport	Proposed 2 nd Week April 2002
A.C. & S, Nitro	Proposed 1 st Week May 2002
C.T. & E. Charleston	Last Week May 2002
REI Consultants, Beaver	3 rd Week June 2002

- Wayne Morganroth is reviewing a draft of the SOP for laboratory certification. Much work remains to be done but attempts will be made to have it completed as soon as possible.

Please let me know if you need additional information.

Joe Slayton

08/28/2003 11:13 AM

To: andrealabik@wvdhhr.org

cc: Robin Costas/ESC/R3/USEPA/US, Charlie Jones/R3/USEPA/US, Rick Rogers/R3/USEPA/US, WandaF Johnson/R3/USEPA/US

cc: Robin Costas/ESC/R3/USEPA/US, Charlie Jones/R3/USEPA/US, Rick Rogers/R3/USEPA/US, WandaF Johnson/R3/USEPA/US

Subject: Corrective Action Plan for WV's Lab Cert Program and other items

A. Comments on the Corrective Action Plan in Response to the SDWA Lab Certification Program On-site Review conducted June 25-26, 2003:

Finding #1. Concerning on-site laboratory inspections, the response and plan look fine. Please routinely provide copies of the inspection reports to the EPA review team as each is finalized. This will help track progress with the projected schedule.

Finding #2. Concerning www.wvdhhr.org, the response is fine.

Finding #3. Concerning out-of-state laboratories, the response is fine. We understand the legal issues of dropping laboratories currently certified. However, consideration should be given to not renewing these laboratories after their current cycle. Please forward the decision/s on this issue from the meeting of the Office of Laboratory Services and the Office of Environmental Services.

Finding #4. Concerning the scope of certification/approvals for the WV Lab Cert Program, please forward the decision/s on this issue from the meeting of the Office of Laboratory Services and the Office of Environmental Services.

Finding #5. Concerning "Additional Suggestions", please provide information regarding item "a" and "b", which are focused on microbiology.

Robin Costas, Chemist
Joseph Slayton, Technical Director

B. We had targeted 8/29/03 for completion of the Corrective Action report regarding the on-site assessment of your laboratory (chemistry and microbiology) and wondered how that effort is going?

C. Patricia Krantz, ASQAB's Director, had sent you a request for information and has not yet received it. Please give her a call (410-305-2730).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
Analytical Services and Quality Assurance Branch
701 Mapes Road
Fort Meade, MD 20755-5350

September 4, 2003

Andrea M. Labik, Sc. D.
Director
West Virginia Department of Health & Human Resources
Bureau for Public Health
Office of Laboratory Services
167 11th Avenue
South Charleston, West Virginia 25303-1137

Dear Dr. Labik:

The assessment team has completed the review of the corrective action reports for the on-site assessment of the WV's Laboratory Certification Program (8/21/03) and the WV Health Laboratory (8/29/03), prepared in response to our on-site assessment reports (dated July 16, 2003 for the program review and July 28, 2003 for the laboratory review). We have the following comments:

Laboratory Review (findings for Inorganic Chemistry, no findings for Microbiology):

General:

Corrective action for finding #1: EPA's Office of Ground Water and Drinking Water (OGWDW, Cincinnati), has pointed out that drinking water analyses (compliance analyses) for WV's Office of Environmental Health Services (OEHS) must be performed by laboratories that are certified by EPA or by a State other than WV. We need to have copies of the signed certificates from other state/s to complete our records. We had underlined this part of the finding in our report, however the listing provided with the corrective action report includes a number of laboratories that list only WV certification. It is suggested that this item needs to be added to the agenda for discussion with the OEHS, e.g., Ms. Linda Keller, Assistant Manager of Regulatory Development and Compliance. OGWDW cites the Federal Register for this requirement (2002 CFR 141.11 vi on page 564).

Corrective action for finding #2: The response is fine, we will add a copy of the "Inorganic Chemistry Analysis Report" to our files when received.

Corrective action for finding #3: The response is fine, we will add a copy of updated SOP to our files when received.

Corrective action for finding #4: The response is fine, we will add a copy of the example

instrument printout with analyst's initial/date to our files when received.

Corrective action for finding #5: The response is fine.

Program Review (Comments from EPA were provided via E-mail (8/28/03) with the following open items listed in **bold print**):

Finding #1. Concerning on-site laboratory inspections, the response and plan look fine. **Please routinely provide copies of the inspection reports to the EPA review team as each is finalized. This will help track progress with the projected schedule.**

Finding #2. Concerning www.wvdhhr.org, the response is fine.

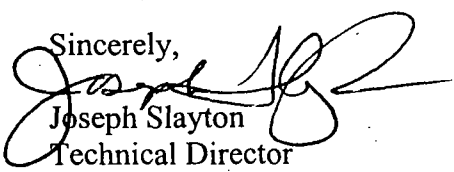
Finding #3. Concerning out-of-state laboratories, the response is fine. We understand the legal issues of dropping laboratories currently certified. However, consideration should be given to not renewing these laboratories after their current cycle. **Please forward the decision/s on this issue from the meeting of the Office of Laboratory Services and the Office of Environmental Health Services.**

Finding #4. Concerning the scope of certification/approvals for the WV Lab Cert Program, **please forward the decision/s on this issue from the meeting of the Office of Laboratory Services and the Office of Environmental Health Services.**

Finding #5. Concerning "Additional Suggestions", please provide information regarding item "a" and "b", which concern microbiology. This information was received on 8/29/03 with a follow-up return E-Mail (9/2/03), urging additional clerical help for microbiology to afford the organization of out-of-state laboratory certification records comparable with the filing system for the in-state laboratories.

Upon receipt of the listed information/materials we will issue an updated certification report for inorganic chemistry and will close out the on-site assessment (laboratory and program office). If you have any questions please call me at 410-305-2653 or E-mail (Slayton.joe@epa.gov).

Sincerely,


Joseph Slayton
Technical Director

cc:

Robin Costas (3ES20)
David Russell (3ES20)
Richard Rogers (3WP22)
Charles Jones, Jr. (3ES10)
Wanda Johnson (3WP22)

JS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
Analytical Services and Quality Assurance Branch
701 Mapes Road
Fort Meade, MD 20755-5350

October 10, 2003

Andrea M. Labik, Sc. D.
Director
West Virginia Department of Health & Human Resources
Bureau of Public Health
Office of Laboratory Services
167 - 11th Avenue
South Charleston, West Virginia 2503-1137

Dear Dr. Labik:

Please thank all for their participation on today's conference call. With this communication I could like to summarize the status of the corrective actions in response to our June 2003 on-site reviews of your laboratory and laboratory certification program and close-out those on-site assessments. With regard to the **SDWA certification of your laboratory**, I think today's meeting was especially helpful to resolve the issue of laboratories to be employed for SDWA analyses by WV's Office of Environmental Health Services (OEHS), i.e., they must be certified by EPA and Region 3 is accepting the certifications of states other than WV (can be a laboratory which also has WV certification and can be a laboratory physically within WV). This was item #1 on the original laboratory assessment report. Richard Rogers has provided the following related Federal Register references: 40 C.F.R. 142.11 (iv); 40 C.F.R. 142.10 (b) (3) (i); and 142.10 (b) (4).

Also, I have received an electronic copy of the updated SOP for pH from your laboratory this afternoon (item #3 in the original findings report). As per our meeting today, I double checked the material from Dr. Morganroth postmarked 9/5/03 and indeed the inorganic analysis worksheet (item #2), and the bench sheet for IC (item #4) were included in the package. Based upon this additional information I am recommending the following certification status for your laboratory: **Certification Status:**

Certified:

Metals:

Arsenic; Antimony; Barium; Beryllium; Cadmium; Chromium; Copper; Lead; Mercury; Nickel, Selenium; Sodium; and Thallium.

Certified:

Inorganic Non-Metals:

Alkalinity; Conductance; Cyanide; Fluoride; Nitrate; Nitrite; pH; Turbidity; and Hardness.

Secondary Analytes:

Acceptable:

Metals:

Aluminum; Iron; Manganese; Silver; and Zinc.

Inorganic Non-Metals:

Chloride; Sulfate; and TDS.

Regarding the review of WV's SDWA Laboratory Certification Program one item was unfortunately not discussed during today's session, namely item #4 from the original report:

"#4. Scope of Certification/Approval:

Finding: The listing of laboratory certifications and approvals provided by Laboratory Services for chemistry do not include the full scope of the SDWA program and also include certifications which are not provided by Laboratory Services.

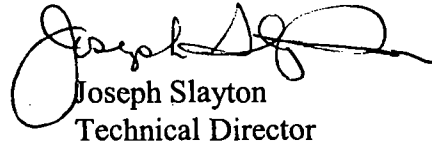
Suggested Corrective Action: Laboratory Services should work with the WV Environmental Health Services program managers to determine possible additional areas for certification and/or approval, e.g., alkalinity, bromate, calcium, chlorite, conductivity, orthophosphate, pH, turbidity, silica, Specific Ultraviolet Absorption (SUVA) and TOC. Also, consideration should be given to dropping radiochemistry and asbestos from the listing.

WV Response: Appropriate action with regard to the **Suggested Corrective Action** will need to be addressed after Laboratory Services and the Office of Environmental Health Services have a meeting to jointly decide the appropriate action that should be taken to add additional analytes from the specified list. We are presently certifying laboratories for TOC and SUVA analyses if they are presently a certified drinking water laboratory and have obtained acceptable WS PT results for these two analytical areas. For some time our certification personnel have wished to remove radiochemistry analyses from our listing of certifiable analytes. We have never certified laboratories for radionuclide analyses and have listed laboratories that were so certified by the Office of Environmental Health Services for informational purposes only. Although we can make such a deletion, I am not sure we can take a like action for asbestos since we are presently certifying (via reciprocity) one out-of-State laboratory for this parameter. This laboratory is situated in California and is certified for asbestos (by two EPA methods) by the California NELAP Authority."

I spoke to OEHS manager, Linda Keller, after our meeting and she indicated the State does need to approve the list of analytes listed, but that a number of these are analyzed at the DW facilities

and OEHS personnel approve the procedures and equipment. She encourages (if time permits) the Office of Laboratory Services to offer the review and approval of these analytical areas as part of the WV lab certification program. This would be limited to those analytes with holding times which would permit a commercial laboratory to perform the analyses (not pH for example). Please contact her if you have questions. I think this closes out the issues on the Laboratory Certification Program and **I look forward to receiving copies of the on-site assessment reports as they are issued and copies of the certificates of the laboratories used or planned to be used by OEHS (OEHS to work with Richard Rogers).**

Sincerely,



Joseph Slayton
Technical Director

cc:

Richard Rogers (3WP22)
Wanda Johnson (3WP22)
Robert Lange (3WP32)
Charles Jones, Jr. (3EA00)
Linda Miller (WV OEHS)

Ex. 5 - Deliberative



Ed Glick

08/05/2003 10:41 AM

To: Joe Slayton/ESC/R3/USEPA/US@EPA

cc: Caroline Madding/CI/USEPA/US@EPA, Pat Hurr/CI/USEPA/US@EPA

Subject: Re: When State Lab Is not certified for all SDWA areas

The citation you asked for is 141.11 vi on page 564 of the 2002 CFR.

You can accept reciprocity for a lab as you stated. Only worry is who certified the lab and to watch for conflict of interest, but it sounds free to me.

If you have other questions ask away.

Sounds like John has come to a conclusion with the "Interim" certification for U for PA.

Ed Glick

Chemist,

Certification Team,

Network Manager,

Information Security Officer

U.S.EPA

513 569 7939

Joe Slayton

Joe Slayton

07/31/2003 05:29 PM

To: Ed Glick/CI/USEPA/US@EPA, Caroline Madding/CI/USEPA/US@EPA

cc:

Subject: When State Lab Is not certified for all SDWA areas

1. Could you folks point me to the source for information on this topic?
2. Carol had indicated the Region could accept another State's certifications (reciprocity).
3. Please mark up what is wrong with the following:

General:

1. The principle WV state SDWA laboratory must maintain capability and certification for all the contaminants specified in the State Primary Drinking Water Regulations, p. E-1 CLADW, unless the State has been granted waivers for compliance monitoring of these analytes or has contracted with laboratories which are SDWA certified (by EPA or by a state other than WV such as Lancaster Laboratories, Pennsylvania) for these analytes. A listing of commercial laboratories that are employed by the State program for SDWA compliance monitoring for the analytes not measured at the WV Lab and their current SDWA Certification status (signed copies of the certificates from other state/s) is necessary to complete our records. Also, in the future as new certificates are issued to these laboratories, electronic copies should be routinely forward to the certification officer.

Joe Slayton

07/02/2003 06:28 PM

To: Caroline Madding/CI/USEPA/US
cc: Ed Glick/CI/USEPA/US@EPA, hurr.pat@epa.gov
cc: Ed Glick/CI/USEPA/US@EPA, hurr.pat@epa.gov
Subject: Re: Draft Reports

Actually, if the state does not maintain the capability to analyze for all regulated analytes, but is going to specify a contract lab analyze compliance samples, that lab must be certified by EPA. Not to panic, you could do it by reciprocity, but they must be certified by EPA not the state.

The State Lab gets next to no compliance samples. Essentially all "real" (compliance) water samples for chemistry (they do microbiology) go directly from the suppliers to commercial labs. So you are saying that I need to specify that the WV lab list as their back up lab for organics (**should they ever get a request**) be a lab out of state that is certified for SDWA by another State for all organics (Lancaster Labs was in their lab certification records and is certified by just about everyone) and that then I need to establish reciprocity with the primary State authority. Specifying that the back up lab be certified by an out of State Lab is not a problem, but I have no idea what I would do to establish reciprocity with another State's certification program (example PA DEP for Lancaster Lab). Please fill me in on that. Does it just involve have a letter to a State (e.g., PA) stating we are accepting their certification? If so should that be from the Regional CA?

Well as you have seen I am just back from WV and I find I have a real big related problem (another draft report)

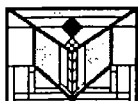


WVPG2003.wpd

In my opinion the lab cert program in chemistry should be give higher priority than the State Lab's chemistry capability since all the compliance work is going to those labs. Though being assured that the Lab Cert. Program for Chemistry was catching-up on on-site inspection (even by their Associate Director) they are way way behind (criminally if you ask me!). They are fine for Microbiology. I have raised hell with them about that and their misleading web page as per my draft reports . The problems are now as bad or worst then those I had 2 years ago in DE. As I told them repeatedly during the assessment and closing briefing I plan to share all this with WV, OGWDW, R3's WPD , Regional QA Manager and WV's Water Program office, so as to raise this critical problem with all and to get this all fixed yesterday...so the draft reports to you is fine with me--actually better than fine--lucky. The finals should be done next week and If you can give me pointers on the reciprocity procedure I can add that with the 2nd state certification requirement to the corrected report.

Thanks for your continued help. JoeS

Caroline Madding



Caroline Madding

07/01/2003 10:21 AM

To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc: Ed Glick/CI/USEPA/US@EPA, hurr.pat@epa.gov
Subject: Re: Draft Reports


The principle WV state SDWA laboratory must maintain capability and certification for all the contaminants specified in the State Primary Drinking Water Regulations, p. E-1 CLADW, unless the State has been granted waivers for compliance monitoring of these analytes or has contracted with laboratories which are SDWA certified (by EPA or by a state other than WV) for these analytes. A listing of commercial laboratories employed by the State for SDWA compliance monitoring for the analytes not measured at the WV Lab and their current SDWA Certification status (signed copies of the certificates) is necessary to complete our records. Also in the future as new certificates are issued to these laboratories electronic copies should be routinely forward

to the certification officer.

Caroline Madding
USEPA Technical Support Center
MS 140
26 W ML King Drive
Cincinnati, OH 45268
513-569-7402
madding.caroline@epa.gov
Joe Slayton

Joe Slayton

06/30/03 04:21 PM

To: Dave Russell/ESC/R3/USEPA/US@EPA
cc: Ed Glick/CI/USEPA/US@EPA, Caroline Madding/CI/USEPA/US@EPA
Subject: Re: Draft Reports 

Ed or Carol...HELP...do you know or do you know who might be able to help out Dr. Russell our CO for microbiology.

Dave Russell

Hi Joe,

Sometimes you can get yourself in trouble by sending too much information. It looks like the audit of WV was very thorough. But there is one issue.

In the report you say:

"The laboratory lost the capability to perform the analyses of organic contaminants for SDWA in 1997. These analyses are performed by commercial laboratories certified by West Virginia. Efforts are underway to regain this analytical capability."

And

"1. The principle WV state SDWA laboratory must maintain capability and certification for all the contaminants specified in the State Primary Drinking Water Regulations, p. E-1 CLADW, unless the State has been granted waivers for compliance monitoring of these analytes or has contracted with laboratories which are SDWA certified (by EPA or by a state other than WV) for these analytes. A listing of commercial laboratories employed by the State for SDWA compliance monitoring for the analytes not measured at the WV Lab and their current SDWA Certification status (signed copies of the certificates) is necessary to complete our records. Also in the future as new certificates are issued to these laboratories electronic copies should be routinely forward to the certification officer."

Actually, if the state does not maintain the capability to analyze for all regulated analytes, but is going to specify a contract lab analyze compliance samples, that lab must be certified **by EPA**. Not to panic, you could do it by reciprocity, but they must be certified by EPA not the state.



Dave Russell
06/30/2003 04:00 PM

To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc:
Subject: Re: Draft Reports 

Joe,

Who would be the best person to contact regarding a definition of source water compliance sample. Question is whether sampling done under a GUDI study (groundwater under the direct influence of surface water) and pursuant to the Surface Water Treatment Rule, is compliance sampling?

Dave

Joe Slayton

Joe Slayton
06/30/2003 08:16 AM

To: Robin Costas/ESC/R3/USEPA/US@EPA, Dave
Russell/ESC/R3/USEPA/US@EPA
cc:
Subject: Draft Reports

Robin and Dave...30 day clock started last Friday...

Robin attached is the draft...also on J:/Inspections...as you update please change the date on the front of the document. I also have a draft done of the Lab Cert Program...but want to work on it this morning a bit more...I think I was not in a pleasant frame of mind yesterday...I will tone it down a little first before I circulate it.



WV INORG inspection report 2003.wpd



Wayne Morganroth
<waynemorganroth@w
vdhhr.org>

07/31/2003 02:47 PM

To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc: Andrea Labik <andrealabik@wvdhhr.org>, Charlotte Billingsley
<charlottebillingsley@wvdhhr.org>, Linda Keller
<lindakeller@wvdhhr.org>

Subject: Certification On-Site Up-Date

Joe, We thought it would be helpful if we apprised you of our on-site survey activity. Yesterday and the day before (July 29 & 30, 2003) our three chemistry certification officers performed an on-site evaluation of REI Consultants' laboratory at Beaver, WV (in the Beckley, WV area). The additional on-site surveys we now have scheduled (pre-survey packets with notification letters have been mailed) are:

1. August 12 & 13, 2003 CT&E Environmental Services
Charleston, Wv
Their pre-survey package was received July 30,
2003
2. August 26 & 27, 2003 Reliance Laboratories
Bridgeport, WV
Their pre-survey package was received July 18,
2003
3. September 23 & 24, 2003 Sturm Environmental Services
Bridgeport, WV

The Director of this laboratory (Ms. Susan Hickman) had contacted me earlier by telephone to inform us that they wished to have an on-site examination as a means of initiating action to become certified again as a drinking water laboratory. On Friday (July 25, 2003) I called Ms Hickman and notified her that we would be able to perform such an on-site inspection on September 23 & 24, 2003 if such an arrangement were acceptable to their laboratory personnel. Since these dates were acceptable, I will be sending Ms Hickman an official notification letter to that effect later this afternoon. I previously forwarded a copy of

our pre-survey packet and Certification Program Reorganization Packet (which spells out in

detail the particulars of our new - effective date of 1/1/2003 - WS PT performance schedule).

Wayne

Joe Slayton

07/31/2003 04:36 PM

To: Wayne Morganroth <waynemorganroth@wvdhhr.org>
cc: Andrea Labik <andrealabik@wvdhhr.org>, Charlotte Billingsley
<charlottebillingsley@wvdhhr.org>, Linda Keller
<lindakeller@wvdhhr.org>
cc: Joe Slayton/ESC/R3/USEPA/US@EPA, Andrea Labik
<andrealabik@wvdhhr.org>, Charlotte Billingsley
<charlottebillingsley@wvdhhr.org>, Linda Keller
<lindakeller@wvdhhr.org>

Subject: Re: Certification On-Site Up-Date

Great! I trust the on-site went well. It has been my experience that it so very much easier to write the report as soon as possible after the inspection....even though we all try to write everything down...time takes it toll with the facts. For your lab's on-site review I had the first cut of the inorganic and lab cert program reports written by the next Monday--the hold up was vacations for the other assessment team members and "word smithing". The sooner the better for your first cut...you can clean it up and make it "pretty" any time later when time permits. Just some free advice. "Happy hunting" out there and please do remember the R3 CO's **prime directive** (like Star Trek): Come back alive and well.
Wayne Morganroth <waynemorganroth@wvdhhr.org>



Wayne Morganroth
<waynemorganroth@wvdhhr.org>

07/31/2003 02:47 PM

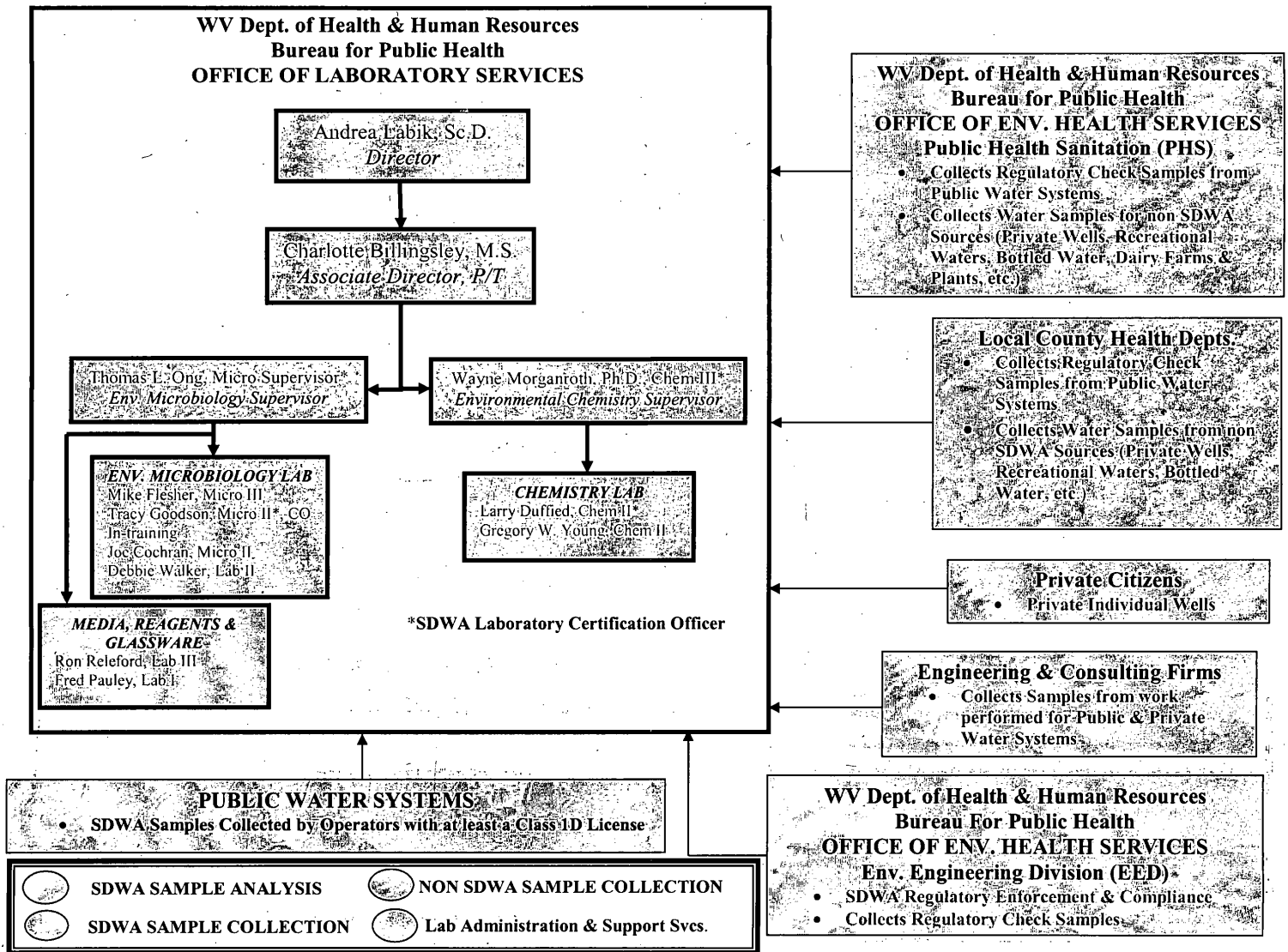
To: Joe Slayton/ESC/R3/USEPA/US@EPA
cc: Andrea Labik <andrealabik@wvdhhr.org>, Charlotte Billingsley
<charlottebillingsley@wvdhhr.org>, Linda Keller
<lindakeller@wvdhhr.org>

Subject: Certification On-Site Up-Date

Joe, We thought it would be helpful if we apprised you of our on-site survey activity. Yesterday and the day before (July 29 & 30, 2003) our three chemistry certification officers performed an on-site evaluation of REI Consultants' laboratory at Beaver, WV (in the Beckley, WV area). The additional on-site surveys we now have scheduled (pre-survey packets with notification letters have been mailed) are:

1. August 12 & 13, 2003 CT&E Environmental Services
Charleston, Wv
Their pre-survey package was received July 30,
2003
2. August 26 & 27, 2003 Reliance Laboratories
Bridgeport, WV
Their pre-survey package was received July 18,
2003
3. September 23 & 24, 2003 Sturm Environmental Services
Bridgeport, WV

The Director of this laboratory (Ms. Susan Hickman) had contacted me earlier by telephone to inform us that they wished to have an on-site examination as a means of initiating action to become certified again as a drinking water laboratory. On Friday (July 25, 2003) I called Ms Hickman and notified her that we would be able to perform such an on-site inspection on September 23 & 24, 2003 if such an arrangement were acceptable to their laboratory personnel. Since these dates



WV Microbiology

Drinking Water Certification Program - Microbiology

I. Introduction -

The State of West Virginia is designated a Primacy State, having primary enforcement of the Safe Drinking Water Act (SDWA) and the National Primary Drinking Water Regulations (NPDWR). Under 40 CFR 142.10(b)(4), Primacy States are required to have a principle state laboratory that is certified by the U.S.E.P.A. The Office of Laboratory Services Environmental Microbiology Unit is designated by the U.S.E.P.A. as the principle state laboratory and is therefore responsible for implementing and maintaining the drinking water microbiological certification program for the State of West Virginia. State certification is required for all laboratories that report compliance (with the Safe Drinking Water Act) samples to the state. Compliance samples are monitored and tracked by the Office of Environmental Health Services - Environmental Engineering Division (OEHS-EED).

To maintain status as the principle state laboratory, the Environmental Microbiology Unit must pass a tri-annual on-site evaluation performed by the U.S.E.P.A. Region III's Certification Officer and successfully pass the annual Performance Evaluation (PE) Samples from a certified PE Sample Provider. The Environmental Microbiology Unit must also have the capability for analyzing all of the microbiological contaminants specified in the State Primary Drinking Water Regulations.

The Environmental Microbiology Unit uses the EPA's *Manual for the Certification of Laboratories Analyzing Drinking Water*, Fourth Edition (March 1997) as the minimum standards.

II. Laboratory Certification Officer -

Primacy States must designate Laboratory Certification Officer(s) (LCO) that are responsible for overseeing the certification program. For an analyst to be considered for the LCO Position, they must meet the following criteria:

1. Have at least a Microbiologist II Classification.
2. Successfully complete the U.S.E.P.A.'s week long Drinking Water Certification Course that is held annually in Cincinnati, Ohio.
3. Complete several joint on-site evaluations with the Environmental Microbiology Supervisor.

An analyst will become a LCO when the above criteria are met and the supervisor is confident that the analyst can fully function in that capacity. The Laboratory Certification Officer is a Microbiologist III position.

III. Certification Parameters -

The following are analytes for which certification is offered:

1. Total Coliforms
2. Fecal Coliforms
3. *E. coli*
4. Heterotrophic Bacteria

Below are the approved tests for which the above analytes may be examined:

1. Membrane Filtration
2. Multi Tube Fermentation
3. Chromogenic Fluorogenic Substrate Test
4. Heterotrophic Plate Count - Spread Plate Method

In order for a laboratory to be considered for drinking water microbiological certification, they must have the capability to perform at least one total coliform method and one fecal coliform and/or *E. coli* method.

Lists of certified laboratories are available from the Office of Laboratory Services - Environmental Microbiology Unit and the Environmental Chemistry Unit. The list is also available on the internet at: http://www.wvdhhr.org/phs/forms/water_labs.pdf. These lists contain the following information:

1. Name and Address of Laboratory
2. Head of Laboratory

3. Telephone Number
4. West Virginia Certification Number - for in-state laboratories the certification number consists of a 5 digit number beginning with two zeros followed one or two letters in parenthesis. Numbers are assigned in order of acceptance. A (M) after the number means microbiology only, a (C) after the number means chemistry only and a (C/M) means both chemistry and microbiology. Out-of-State certification numbers are 4 digit numbers beginning with "99". These numbers are also assigned in order of acceptance. The out-of-state numbers are also followed by the same letter designation as the in-state laboratories.
5. Tests for Which Approved - Microbiology is divided into four groups:
 - A. Group I - Membrane Filter (Total Coliforms and Fecal Coliform and/or *E.coli*)
 - B. Group II - Heterotrophic Plate Count (Pour Plate Method)
 - C. Group III - Multi Tube Fermentation (Total Coliforms and Fecal Coliforms and/or *E. coli*)
 - D. Group IV - Chromogenic/Fluorogenic Substrate Test (Total Coliforms and *E. coli*)

The list of certified chemistry laboratories is updated by the Environmental Chemistry Unit.

IV. Certification Renewal -

Certifications are valid from January 1 thru December 31 of any given year. Each year certified laboratories have the option to renew their certification. There is a \$500.00 annual fee for the Microbiology Certification. For the \$500.00, a laboratory can be certified for any number of Groups (I-IV) within the Microbiology Category. The following table outlines the chain of events for the certification renewal process:

Date	Item Sent	Explanation
By November 1	Attachment #1 & #2	This form gives the laboratory the option to renew certification. It also gives the option to delete or add categories. Based on the previous years certification, it also states the amount due to renew certification.
Between November 1 and December 31		This is the period in which the Office of Laboratory Services receives Attachment #1 and #2 back. The initial packets are received by one of the Microbiology LCOs. They will then mark that laboratory off of the list, verify the amount of the check and make a copy of the check. An LCO will review the information provided on the form. If laboratory submitting the packet is certified for any chemistry parameters or is requesting to be certified for any chemistry parameters, then a copy of the entire packet is made (including the check) and forwarded to Environmental Chemistry Unit. For certified chemistry laboratories requesting the addition of microbiology certification - See Sections VI and VII. Packets received are placed in a box labeled "(Year) - Certification Renewals" and stored on the Certification File Cabinet.
January 2	Attachment #3	By December 31, any laboratories that have not responded to Attachment #1 will be sent Attachment #3 by certified mail. This document extends the time frame to January 31 after which if the laboratory has not responded, they will be removed from the list of West Virginia Certified Laboratories.
February 1	Attachment #4	Letter (sent by certified mail) informing laboratory that they have been removed from the list of Certified West Virginia Drinking Water Laboratories for failure to remit the annual fee.
February 14	Attachment #5	Certificate and Parameter Sheets are sent to all of the approved laboratories. A copy of the parameter sheets are placed in a three ring binder (labeled <i>Drinking Water Certification - Microbiology Certificates and Parameter Sheets</i>) and kept in the Environmental Microbiology Office.

The above attachments are stored on Section Supervisor's computer's hard drive in the "Certification Folder". These items are also "Backed-up" on a zip disk labeled "Drinking Water Certification". The following is a list of files on that disk and an explanation:

File Name	Explanation
Parameter [year] Data-[Rev. Date]	Database file containing information on the laboratory. This database file is in spreadsheet form and a copy of this spreadsheet is used as a check-off list. This database must be updated throughout the year and saved using the nomenclature at left.
Certification Renewal Form	This is the form letter which is merged with the above database file. The resulting document is sent to all certified laboratories. Once the two files are merged it is not necessary to save the new document that is created because all of the pertinent information is already saved in the database file. When printing the merged document it is only necessary to print the odd numbered pages (the front page). Page 2 may be copied on the copier.
Cert Renewal Mail Labels	This is the form file that will create the mailing labels. It is also combined with the "Parameter [year] Data-[Rev. Date]" file. The resulting merged document is printed on Avery 8160 Labels. It is not necessary to save the merged document.
Information Form - Certification Renewal	This is the form (Attachment #2) that is also sent with the renewals. It allows the certification files to be updated and also the opportunity for the laboratory to add categories or parameters.
[year] Extension Data	This is a database of the laboratories that did not respond by the first deadline.
Extension Form	This is the from letter (Attachment #3) that is merged with the "Extension Form" file. This letter allows for an extension through the month of January.
Removal Notice [year] Data	Database file for all laboratories failing to meet the extended deadline
Removal Form	Form letter for the "Removal Notice [year] Data" file. This letter notifies the laboratory that they have been removed form the list of Certified West Virginia Drinking Water Laboratories for failure to remit the annual fee.

V. On-Site Evaluations -

On-site evaluation are conducted only for laboratories in the state of West Virginia. Certified Laboratories must pass an on-site evaluation at least once every three years; however, it is preferable to conduct them every two years. Occasionally, some laboratories may warrant an inspection annually (This is usually the result of a high turn-over rate of analysts).

The Laboratory Certification Officer (LCO) is responsible for setting up and conducting

the on-site evaluation.

Every January, a list of laboratories that are due for or in need of an on-site evaluation is set up by the Environmental Microbiology Supervisor (Attachment #6). The information on this form gives a date by which the laboratory must be visited, the LCO responsible for that laboratory, and whether an overnight stay will be required.

The following table describes the chain of events for an on-site evaluation:

Time Frame	Item Sent	Explanation
At least 30 days prior to the desired on-site evaluation date.		Contact the laboratory by telephone to discuss a mutually agreed upon date where all of the analysts can be present.
At least 30 days prior to the desired on-site evaluation date.	Attachment #7	This is a written confirmation of the date plus a pre-survey information form.
Prior to the on-site		The pre-survey information should be received by the LCO.
Day of the on-site		The on-site is conducted by the LCO using the checklist (Part of Attachment #8). Most on-sites require one and a half days.
Within 3 weeks after the on-site.	Attachment #8	The on-site evaluation narrative report listing the deviations found during the on-site and a completed copy of the checklist. A checklist cover and equipment list are also included.
Within the specified time of the narrative report.		The Laboratory will respond to the deviations on the narrative report
Within 2 weeks after the due date for the response if the response has not yet been received.	Attachment #9	This is a reminder that a response to the narrative is past due.
With in 3 weeks after the response has been received if the response is not acceptable.	Attachment #10	This is a letter stating that there still appears to be some areas of concern.

Time Frame	Item Sent	Explanation
Within 3 weeks after the response or additional responses have been received and are acceptable.	Attachment #11	This is a letter that states the status of the laboratory.

Conducting the On-Site Evaluation -

1. The LCO should be scheduled to arrive at the laboratory no earlier than one half hour after the laboratories normal starting time. Some evaluations are scheduled to start after 1:00 p.m. due to traveling times or other on-sites.
2. This LCO must have the Survey Kit with them. This is a briefcase that contains the following items:
 - A. Certified Maximum Registering Thermometer with Certificate
 - B. Level
 - C. Light Meter
 - D. 100 mL Class "A" Graduated Cylinder
 - E. Stopwatch
 - F. Blank Check Lists

Note: The LCO should carry in the brief case the pre-survey information from the laboratory and a copy of the last evaluation.

3. The following gives three scenarios for conducting the on-site evaluations:
 - A. The first day is a full day and the second day is one half day -

Day One

Laboratory Debriefing
Equipment and Facility Check
Media Preparations
Records
Test Procedures

Day Two

Test Procedures
Records
Closing Conference

- B. The first day is one half day and the second day is a full day -

Day One

Laboratory Debriefing
Media Preparations
Test Procedures

Day Two

Equipment and Facility Check
Records
Test Procedures
Closing Conference

- C. One Day Survey (When the laboratory is certified for only the Chromogenic/Fluorogenic Substrate Test) -

Day One

Laboratory Debriefing
Equipment and Facility Check
Records
Test Procedures
Closing Conference

Definitions and Explanations:

Laboratory Debriefing:

Initial conference with laboratory personnel to discuss how the on-site evaluation will proceed and to address any questions and/or concerns.

Equipment and Facility Check:

This is accomplished by following the check list (Part of Attachment #8) and using the items in the briefcase. Plating surface must be level and there must be adequate lighting at the work area (minimum of 50 foot-candles). The autoclave must be checked using the stopwatch and the laboratories autoclave thermometer must be checked with the certified thermometer.

Media Preparations:

How media is being prepared. This is usually done through records, interviews and/or observations. Note: If Plate Count Agar is need, then is should be made or

melted before lunch so that it can temper during lunch

Records:

All records from the last survey to the present are reviewed using the checklist.

Test Procedures:

All of the analysts present must be observed demonstrating all of the testing procedures. At least one sample each.

Closing Conference:

Meeting with the Director, Supervisor and Analysts to discuss the findings of the on-site evaluation. This is also the time to address any question or concerns.

4. The following are the codes for marking the checklist:

S = Satisfactory

X = Unsatisfactory (Deviation)

U = Undetermined

O = Not Applicable or Not Used

Note: It is helpful to keep a list of comments and recommendations along with the checklist that can be included in the narrative report.

5. After the on-site evaluation has been completed and the LCO has returned to the Office of Laboratory Services, the check list, checklist cover, equipment list and narrative report must be typed.

Each in-state certified laboratory is assigned a 3.5" computer disk that is labeled with their name. The following table describes the files that are on these disks:

File Name	Description
Check List-1997.ckc	This file is located on the Section Supervisors Computer in the "Survey Forms" Folder in "Water Certification" Folder. It is the on-site check list. It is already filled in with <u>S</u> 's and <u>O</u> 's so that it will only have to be edited and saved to the A: Drive on the appropriate laboratories diskette using the appropriate nomenclature described in this table.

File Name	Description
Check List Cover.ckc	This file is located on the Section Supervisors Computer in the "Survey Forms" Folder in "Water Certification" Folder. It is a blank cover for the check list. It can be filled in and saved to the A: Drive on the appropriate laboratories diskette using the appropriate nomenclature described in this table.
Equipment List.eql	This file is located on the Section Supervisors Computer in the "Survey Forms" Folder in "Water Certification" Folder. It is a blank form for the equipment list. It can be filled in and saved to the A: Drive on the appropriate laboratories diskette using the appropriate nomenclature described in this table.
llllmmyy.ckl	This is the checklist for a particular laboratory on a particular date. The "llll" is a four letter abbreviation for the laboratory, the "mm" is a two digit number for the month of the on-site and the "yy" is a two digit number for the year of the on-site. The ".ckl" stands for checklist. This file is stored on the laboratories 3.5" diskette. For example: The checklist for Tom's Wonderful Lab, Inc. December 1997 on-site would be stored on the diskette labeled "Tom's Wonderful Lab, Inc." as "toms1297.ckl"
llllmmyy.ckc	This is the check list cover for a particular laboratory on a particular date. The "llllmmyy" is the same as above. The ".ckc" stands for check list cover. This file is stored on the laboratories 3.5" diskette.
llllmmyy.eql	This is the equipment list for a particular laboratory on a particular date. The "llllmmyy" is the same as above. The ".eql" stands for equipment list. This file is stored on the laboratories 3.5" diskette.
llllmmyy.nar	This is the narrative report for a particular laboratory on a particular date. The "llllmmyy" is the same as above. The ".nar" stands for narrative report. This file is stored on the laboratories 3.5" diskette.
llllmmyy.fin	This is the final report for a particular laboratory on a particular date. The "llllmmyy" is the same as above. The ".fin" stands for final report. This file is stored on the laboratories 3.5" diskette.
llllmmyy.ren	This is for the request for any additional information for a particular laboratory on a particular date. The "llllmmyy" is the same as above. The ".re" stands for response and the "n" stands for the number of the request. This file is stored on the laboratories 3.5" diskette. For example: if Tom's Wonderful Lab, Inc.'s December 1997 response to the narrative report was inadequate then the request for additional information would be saved as "toms1297.re1"

When writing the narrative report, follow the example in attachment #8. The first section of the narrative report lists the deviation. The second section on the narrative report lists all items that were labeled as Undetermined. The third section on the narrative report lists suggestions and comments. The fourth and last section of the narrative is the conclusion. The conclusion gives the time frame for a response from the laboratory, usually 30, 60 or 90 days. 30 days for

more serious deviations that require immediate attention and 60 days for less serious deviations. 90 Days can be used if the laboratory has a problem performing the monthly QC Checks. 90 Days will let the laboratory submit 3 months of records to show that the problem has been corrected. The conclusion also makes reference to what records will have to be sent as proof of correction.

6. The laboratory should respond within the specified time frame. If the response is acceptable (all of the deviation have been corrected) then the final report (Attachment #11) can be sent.

The final report is a modification of the original narrative report. It adds the status of the laboratory. All the deviations, undetermined items and comments and suggestions is left on the report. The conclusion is different. The conclusion states the date that documentation was received and indicates that all of the deviations have been corrected. The conclusion also gives a tentative date as to when the next on-site will be.

If the laboratory does not respond within the specified time frame, then a notice (Attachment #9) will be sent reminding them that their response is past due and a response must be received within one week.

If the laboratory's response is not acceptable (all of the deviations have not been corrected) then a letter (Attachment #10) is sent stating that there are still some items of concern. An additional 30 days is usually granted to correct the problems.

7. The above steps are tracked on a chart (Attachment #12) located on the wall in the Environmental Microbiology Office. This chart includes the following:
 - A. Date of On-Site
 - B. Laboratory Name
 - C. Laboratory Certification Officer
 - D. Date the Narrative Report/Checklist was Mailed
 - E. When the Response is Due
 - F. When the Response is Received

- G. Whether the Response was Acceptable, When the Request for Additional Response was Mailed and When Additional Responses are to be Received.
- H. When the Final Report Was Mailed.

VI. Adding A Certified Laboratory (In-State) -

Requests for becoming certified to perform microbiological analysis of drinking water by the State of West Virginia are received by telephone, written requests and by marking the "Add" category on the certification renewal packets. The following is a list of steps that are required for adding a non-certified laboratory to the list of certified laboratories:

1. If the laboratory is currently certified for one or more of the chemistry parameters, then they should already have a copy of the EPA's Manual for the Certification of Laboratories Analyzing Drinking Water, Fourth Edition (March 1997). If they do not have a copy of the manual, then the first step is to forward them a copy.
2. After the laboratory has reviewed and understands the manual, a records audit can be performed. This is accomplished by requesting that the laboratory send at least the last 6 months worth of records (Quality Control, Sample Accession, Bench Sheets, Samples of Report Forms and results from the most recent PE Study).

After the records have been reviewed by the Laboratory Certification Officer, written comments should be forwarded back to the laboratory within 3 weeks.

3. Once the records are acceptable, an on-site evaluation will be scheduled a mutually agreed upon date. See Section V (On-Site Evaluations).
4. Once all of the deviations have been corrected, an application will be forwarded (Attachment #13).
5. When the completed application and appropriate fee have been received, a certificate and number (Attachment #5) will be issued. The annual fee for microbiology certification is \$500.00. This fee is pro-rated throughout the year by the following table:

Certification Granted	Fee Required
January, February, March	\$500.00

Certification Granted	Fee Required
April, May, June	\$375.00
July, August, September	\$250.00
October, November, December	\$125.00

VII. Adding a Certified Laboratory (Out-of-State) -

Although West Virginia does not have reciprocity, certification is granted to out-of-state laboratories meeting the requirements.

Requests for becoming certified to perform microbiological analysis of drinking water by the State of West Virginia are received by telephone, written requests and by marking the "Add" category on the certification renewal packets.

When a request is received, the following information is entered on a database called "New Certification Request.dat" in the "Water Certification" Folder on the Section Supervisor's Computer:

1. Date of Request
2. Last Name (Contact Person)
3. First Name (Contact Person)
4. Salutation
5. Laboratory
6. Address
7. City, State, Zip
8. State (Complete Spelling - Not Abbreviated)

This information is merged with the form letter file "Certification Request Form" in the "Water Certification" Folder.

This form letter (Attachment #14) requests certain information. Once the requested information has been received and reviewed, the findings will be forwarded in writing back to the laboratory. If all of the information is acceptable, a letter of acceptance (Attachment #15) will be sent.

The letter of acceptance is comprised of a database file "Certification Acceptance Data" and a form file "Certification Acceptance Letter" in the Water Certification Folder.

The "Certification Acceptance Data" file contains the following information:

1. Salutation
2. First Name (Contact Person)
3. Last Name (Contact Person)
4. Laboratory
5. Street Address
6. City
7. State
8. Zip
9. Date Documentation Was Received
10. Certification Status
11. Procedures
12. Fee Required

Note: The fee is pro-rated using the table in Section VI.

VIII. Performance Evaluation Samples -

All laboratories certified in West Virginia to analyze drinking water must participate annually in a Performance Evaluation (PE) Study for each test method that they are

certified for. PE Samples for the Heterotrophic Plate Count are not currently required. The PE Samples must be obtained from a certified PE Sample Provider. Certified laboratories must submit PE Results to the LCO annually. Failure to do so will result in that laboratory being downgraded to "Provisionally Certified". The laboratory will be notified by certified mail of their downgraded status. The downgraded laboratory must participate in a PE Study within 30 days of being notified of their downgraded status.

A laboratory that fails a PE Study will not be downgraded to "Provisionally Certified" if they correct the problem and document the reason for failure and it is found acceptable to the LCO. They must also successfully participate in a in another PE Study within 30 days of the failure. If the laboratory would fail the second PE Study, then their status would be downgraded to "Provisionally Certified".

A "Provisionally Certified" Laboratory (as a result of PE Performance) must successfully participate in a PE Study within 30 days of being notified of the downgraded status. If a "Provisionally Certified" Laboratory fails a PE Study, they certification status will be revoked for that particular test method. Full Certification status may be regained upon successful completion of PE Study.

PE Performance for each certified laboratory is tracked on the "Performance Evaluation (PE) Sample Tracking Chart" (Attachment #16) and summerized on the "WV On-Site Evaluation and W.S.M. Schedule" (Attachment #6).

IX. Record Retention and Storage -

The following table summarizes how records are stored:

Record	Storage
Certification Renewal Forms (Attachment #1)	The blank forms entitled "Certification Renewal Form" are stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. Completed forms received from laboratories are stored in a folder labeled "[YEAR]-Certification Renewals". Folders are kept in the Certification File Cabinet for at least 10 years.

Record	Storage
"Laboratory Information Form" (Attachment #2)	The blank forms entitled "Laboratory Information Form - Certification Renewal" are stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. Completed forms received from laboratories are stored in a folder labeled "[YEAR]-Certification Renewals". Folders are kept in the Certification File Cabinet for at least 10 years.
Letter - "Extending Certification Renewal Deadline" (Attachment #3)	The blank forms entitled "Extension Form" are stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. Two copies of this letter is made; one copy is stored in folder labeled "[YEAR]-Certification Extensions and the other is sent certified mail to the appropriate laboratory. Folders are kept in the Certification File Cabinet for at least 10 years.
Letter - "Removing Certification For Failure To Pay The Certification Renewal" (Attachment #4)	The blank forms entitled "Removal Form" are stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. Two copies of this letter is made; one copy is stored in folder labeled "[YEAR]-Decertification and the other is sent certified mail to the appropriate laboratory. Folders are kept in the Certification File Cabinet for at least 10 years.
Database - For Certification Renewals	The Database is entitled "Parameter [YEAR] Data [REV DATE]" and is stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk.
Database - For Certification Renewals (Laboratories Not Meeting The First Deadline)	The Database is entitled "[YEAR] Extension Data" stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. Diskettes kept a minimum of 10 years.
Database - For Certification Renewals (Notifying Laboratories That They Are No Longer Certified In West Virginia	The Database is entitled "Removal Notice [YEAR] and is stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. Diskettes kept a minimum of 10 years.
Mail Labels For Certification Renewals	The labels are stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. "Parameter [YEAR] Data [REV DATE]" File must be merged with this file. New merged file does not have to be saved. Copies of mail labels are not kept.
Certificates and Parameter Sheets (Attachment #5)	These are printed by the Environmental Microbiology Supervisor. Originals are sent to the appropriate laboratory and a copy of the Parameter Sheet is kept in a three ring binder labeled "Drinking Water Certification - Microbiology Certificates and Parameter Sheets". At least the last ten years are kept in this binder.

Record	Storage
Laboratory Survey Schedule (Attachment #6)	Current year is posted on the wall in the Environmental Microbiology Office. The originals are stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk.
Pre-Survey Information (Attachment #7)	The blank forms are stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. Completed forms received from laboratories are kept in that laboratories folder. Folders are labeled "[LABORATORY NAME - DATE(S) OF ON-SITE]" and stored in the Certification File Cabinet for at least ten years.
Narrative Report (Attachment #8)	Stored on 3.5" diskette labeled with the appropriate laboratories' name. File name "(for letters for the laboratory)(2 digits for month of on-site)(2 digits for year of on-site).nar." Two copies are printed, one kept in appropriate laboratories hanging 3 ring binder in Certification File Cabinet, the other is sent to the appropriate laboratory. Diskettes are kept indefinitely. Copy in hanging 3 ring binder is kept for at least 10 years.
Check List Cover (Attachment #8)	Stored on 3.5" diskette labeled with the appropriate laboratories' name. File name "(for letters for the laboratory)(2 digits for month of on-site)(2 digits for year of on-site).nar." Two copies are printed, one kept in appropriate laboratories hanging 3 ring binder in Certification File Cabinet, the other is sent to the appropriate laboratory. Diskettes are kept indefinitely. Copy in hanging 3 ring binder is kept for at least 10 years.
Equipment List (Attachment #8)	Stored on 3.5" diskette labeled with the appropriate laboratories' name. File name "(for letters for the laboratory)(2 digits for month of on-site)(2 digits for year of on-site).eql." Two copies are printed, one kept in appropriate laboratories hanging 3 ring binder in Certification File Cabinet, the other is sent to the appropriate laboratory. Diskettes are kept indefinitely. Copy in hanging 3 ring binder is kept for at least 10 years.
Check List (Attachment #8)	Stored on 3.5" diskette labeled with the appropriate laboratories' name. File name "(for letters for the laboratory)(2 digits for month of on-site)(2 digits for year of on-site).ckl." Two copies are printed, one kept in appropriate laboratories hanging 3 ring binder in Certification File Cabinet, the other is sent to the appropriate laboratory. Diskettes are kept indefinitely. Copy in hanging 3 ring binder is kept for at least 10 years.
Letter - "Response Past "Due" (Attachment #9)	Stored on 3.5" diskette labeled with the appropriate laboratories' name. File name "(for letters for the laboratory)(2 digits for month of on-site)(2 digits for year of on-site).re(# of response)." Two copies are printed, one kept in appropriate laboratories hanging 3 ring binder in Certification File Cabinet, the other is sent to the appropriate laboratory. Diskettes are kept indefinitely. Copy in hanging 3 ring binder is kept for at least 10 years.

Record	Storage
Letter - "Areas Of Concern" (Attachment #10)	Stored on 3.5" diskette labeled with the appropriate laboratories' name. File name "(for letters for the laboratory)(2 digits for month of on-site)(2 digits for year of on-site).re(# of response)." Two copies are printed, one kept in appropriate laboratories hanging 3 ring binder in Certification File Cabinet, the other is sent to the appropriate laboratory. Diskettes are kept indefinitely. Copy in hanging 3 ring binder is kept for at least 10 years.
Final Reports (Attachment #11)	Stored on 3.5" diskette labeled with the appropriate laboratories' name. File name "(for letters for the laboratory)(2 digits for month of on-site)(2 digits for year of on-site).nar." Two copies are printed, one kept in appropriate laboratories hanging 3 ring binder in Certification File Cabinet, the other is sent to the appropriate laboratory. Diskettes are kept indefinitely. Copy in hanging 3 ring binder is kept for at least 10 years.
Tracking Chart (Attachment #12)	Posted on wall in Environmental Microbiology Office. The file is stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. File name "Tracking Chart".
Application (New Laboratory) (Attachment #13)	Blank copies are stored in shelves in Environmental Microbiology Office. Completed copies received from laboratories are kept in the laboratories' appropriate folder for at least 10 years.
Letter - "Out-Of-State Requirements" (Attachment #14)	The file is stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. File name "Certification Request Form". This file is merged with the database "Certification Request Data" located on the same diskette. Two copies of the resulting document are printed. One copy is sent to the laboratory requesting to be certified, the other is placed in the laboratories' folder and stored in the Certification File Cabinet.
Letter - "Acceptance For An Out-Of-State Laboratory" (Attachment #15)	The file is stored on the section supervisors computer in the Water Certification Folder and backed up on the Water Certification Zip Disk. File name "Certification Acceptance Form". This file is merged with the database "Certification Data" located on the same diskette. Two copies of the resulting document are printed. One copy is sent to the laboratory meeting the certification requirements, the other is placed in the laboratories' folder and stored in the Certification File Cabinet.

ENVIRONMENTAL

DRINKING WATER LABORATORY CERTIFICATION RENEWAL

Invoice: 2000-FIELD(Cert#)

DATE

FIELD(Renewal Contact)

FIELD(Lab)

FIELD(Mail Address)

Your Laboratories Drinking Water Certification in the State of West Virginia expires on December 31, 1999. Our records indicate that you are currently certified (or provisionally certified) in West Virginia for the following parameters:

RENEW/DELETE	PARAMETER	ANNUAL FEE
<input type="checkbox"/> Renew <input type="checkbox"/> Delete	FIELD(Parameter Gp.)	FIELD(Fee)
<input type="checkbox"/> Renew <input type="checkbox"/> Delete		
<input type="checkbox"/> Renew <input type="checkbox"/> Delete		
<input type="checkbox"/> Renew <input type="checkbox"/> Delete		
TOTAL AMOUNT		\$

To renew certification, please provide the following:

1. Check the appropriate boxes in the table above and remit the appropriate fee along with a copy of this invoice. Make checks payable to: **WVDHHR-Laboratory Services**.
2. In order to keep records updated, please complete the enclosed laboratory information form.

3. A copy of the results of the most recent EPA and/or State Performance Evaluation Study.

The following is for out of state laboratories only:

4. A copy of the most recent on-site evaluation report.
5. A copy of your certificate from your home state.

Please send the above information by December 1, 1999 to:

**Tom Ong, Microbiologist Supervisor
Laboratory Certification Officer
WV Office of Laboratory Services
167 - 11th Avenue
South Charleston, WV 25303**

Certificates will be mailed as soon as the renewal packets have been processed. Your previous Certificate of approval will remain valid until you receive the current Certificate provided your renewal packet is received by December 31, 1999.

If you wish to add categories to you current list or have any questions, please contact:

For Microbiology	-	Tom Ong (304) 558-3530 or Joyce Vance-Abshire (304) 558-3530
For Chemistry	-	Wayne Morganroth, Ph.D. (304) 558-0197

LABORATORY INFORMATION FORM

Date: _____

Name of Laboratory: _____

Mailing Address: _____

Shipping Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____

FAX: _____

e-mail: _____

Name of Director: _____ Contact Person: _____

Send Certification Renewals To: _____

Place an "X" in the appropriate box below:

ANALYTE/ TEST	CURRENT STATUS IN HOME STATE			WISH TO ADD WV CERTIFICATION
	CERTIFIED	PROVISIONAL/ CONDITIONAL	DECERTIFIED	
☆☆☆☆☆ Microbiology ☆☆☆☆☆				
Group I - Membrane Filter (Total Coliforms and Fecal Coliforms/ <i>E. coli</i>)				
Group II - Heterotrophic Plate Count				
Group III - Multi Tube Fermentation (Total Coliforms and Fecal Coliforms/ <i>E. coli</i>)				
Group IV - Chromogenic/ Fluorogenic Substrate Test (Total Coliforms and <i>E. coli</i>) <input type="checkbox"/> Colilert <input type="checkbox"/> Colisure				

ANALYTE/ TEST	CURRENT STATUS IN HOME STATE			REQUEST WV CERTIFICATION
	CERTIFIED	PROVISIONAL/ CONDITIONAL	DECERTIFIED	
☆☆☆☆☆ Chemistry (Inorganics) ☆☆☆☆☆				
Trace Metals - Group I				
Lead				
Copper				
Trace Metals - Group II				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Mercury				
Selenium				
Thallium				
Inorganics - Group I (Nitrate-N)				
Inorganics - Group II (Nitrite-N)				
Inorganics - Group III (Fluoride)				
Inorganics - Group IV (Asbestos)				
Inorganics - Group V (Cyanide)				
☆☆☆☆☆ Chemistry (THM/VOC/HAA) ☆☆☆☆☆				
Organics, THM's				
Chloroform				
Bromodichloromethane				
Chlorodibromomethane				
Bromoform				
Total Trihalomethanes				

ANALYTE/ TEST	CURRENT STATUS IN HOME STATE			REQUEST WV CERTIFICATION
	CERTIFIED	PROVISIONAL/ CONDITIONAL	DECERTIFIED	
Organics, VOC's - Group I				
Benzene				
Carbon tetrachloride				
1,2-Dichloroethane				
Trichloroethylene				
1,1-Dichloroethylene				
1,1,1-Trichloroethane				
p-Dichlorobenzene				
Vinyl chloride				
o-Dichlorobenzene				
cis-1,2-Dichloroethylene				
trans-1,2-Dichloroethylene				
Ethylbenzene				
Styrene				
Tetrachloroethylene				
Toluene				
Xylenes (total)				
Monochlorobenzene				
Dichloromethane				
1,2,4-Trichlorobenzene				
1,1,2-Trichloroethane				
1,2-Dichloropropane				
Organics, VOC's - Group II				
Ethylene dibromide (EDB)				
Dibromochloropropane (DBCP)				

ANALYTE/ TEST	CURRENT STATUS IN HOME STATE			REQUEST WV CERTIFICATION
	CERTIFIED	PROVISIONAL/ CONDITIONAL	DECERTIFIED	
Haloacetic Acids				
Bromoacetic Acid				
Bromochloroacetic Acid				
Chloroacetic Acid				
Dibromoacetic Acid				
Dichloroacetic Acid				
Trichloroacetic Acid				
☆☆☆☆☆ Chemistry (Pesticides/Herbicides/SOC's) ☆☆☆☆☆				
Organics, Pesticides - Group I				
Endrin				
Lindane				
Methoxychlor				
Toxaphene				
Chlordane				
Heptachlor				
Heptachlor Epoxide				
Hexachlorobenzene				
Hexachlorocyclopentadiene				
Organics, Pesticides - Group II				
Alachlor				
Atrazine				
Simazine				
Organics, Pesticides - Group III				
Aldicarb				
Aldicarb sulfone				
Aldicarb sulfoxide				
Carbofuran				

ANALYTE/ TEST	CURRENT STATUS IN HOME STATE			REQUEST WV CERTIFICATION
	CERTIFIED	PROVISIONAL/ CONDITIONAL	DECERTIFIED	
Oxamyl (Vydate)				
Organics, Pesticides - Group IV				
PCB's (Screen & Confirm)				
Organics, Pesticides - Group V				
Diquat				
Organics, Pesticides - Group VI				
Endothall				
Organics, Pesticides - Group VII				
Glyphosate				
Organics, Herbicides				
2,4,-D				
2,4,5-TP (Silvex)				
Pentachlorophenol				
Dinoseb				
Dalapon				
Picloram				
Organics, SOC's - Group I				
Benzo(a)pyrene				
Organics, SOC's - Group II				
Di(2-ethylhexyl)adipate				
Di(2-ethylhexyl)phthalate				
Organics, SOC's - Group III				
2,3,7,8-TCDD (Dioxin)				

ENVIRONMENTAL

DRINKING WATER LABORATORY CERTIFICATION RENEWAL

★★★ FINAL NOTICE ★★★

DATE

To: FIELD(Renewal Contact)
FIELD(Lab)
FIELD(Mail Address)

From: Laboratory Certification Officer

RE: Certification Renewal

Drinking Water Certification Renewals for the State of West Virginia were due by December 15, 2000. As of December 15, 2000, your laboratories renewal packet has not been received.

This deadline can only be extended until December 29, 2000. Laboratories not responding by this extended deadline will be removed from the list of West Virginia Certified Drinking Water Laboratories.

If you did not receive the original renewal packet or need another copy, please call Tom Ong at (304) 558-3530.

ENVIRONMENTAL

Drinking Water Certification

January 9, 2001

To: FIELD(Renewal Contact)
FIELD(Lab)
FIELD(Mail Address)

From: Laboratory Certification Officer

RE: Drinking Water Certification

Your laboratory has failed to respond to two requests to renew your Drinking Water Certification with the State of West Virginia. It is with regrets that we must remove your laboratory from the list of West Virginia Certified Drinking Water Laboratories.

Effective January 1, 2001, the State of West Virginia will no longer accept analytical results pertaining to Drinking Water generated by your laboratory.

If you wish to regain certification in the State of West Virginia, please contact one of the following Laboratory Certification Officers:

For Microbiology:

Thomas L. Ong	(304) 558-3530
Joyce Vance-Abshire	(304) 558-3530

For Chemistry:

Wayne Morganroth, Ph.D.	(304) 558-0197
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STATE OF WEST VIRGINIA

DEPARTMENT OF HEALTH AND HUMAN RESOURCES
BUREAU FOR PUBLIC HEALTH
OFFICE OF LABORATORY SERVICES

CERTIFIES THAT

FIELD(LAB)
FIELD(LABORATORY ADDRESS)
FIELD(CITY) FIELD(STATE) FIELD(ZIP)

HAVING DULY MET THE REQUIREMENTS OF THE
CERTIFICATION OF LABORATORIES TO CONDUCT DRINKING WATER TESTS
(\$64CSR 3.1.3)

IS HEREBY APPROVED AS A
1-8-03
STATE-CERTIFIED DRINKING WATER LABORATORY
TO PERFORM THE ANALYSES INDICATED ON THE
CERTIFIED PARAMETER LIST
WHICH MUST ACCOMPANY THIS CERTIFICATE

FIELD(CERT#)
CERTIFICATE NUMBER
JANUARY 1, 2001
DATE OF ISSUE

LABORATORY DIRECTOR
CERTIFICATION OFFICER(S)

STATE OF WEST VIRGINIA
MONTANI SEMPER LIBERI
CERTIFICATE EXPIRES DECEMBER 31, 2001



STATE OF WEST VIRGINIA

DEPARTMENT OF HEALTH AND HUMAN RESOURCES
BUREAU FOR PUBLIC HEALTH

OFFICE OF LABORATORY SERVICES

THIS IS TO CERTIFY THAT THE FOLLOWING
LABORATORY HAS BEEN APPROVED TO PERFORM THE INDICATED PROCEDURES ON DRINKING
WATER IN ACCORDANCE WITH WEST VIRGINIA §64CSR 3-13:

FIELD(LAB)
FIELD(LABORATORY ADDRESS)
FIELD(CITY), FIELD(STATE) FIELD(ZIP)

CERTIFIED PARAMETER LIST

FIELD(PARAMETER)

*INDICATES PROVISIONAL CERTIFICATION FOR PARAMETER OR GROUP

CERTIFICATE EXPIRES DECEMBER 31, 2001 UNLESS SOONER WITHDRAWN.

CERTIFICATE NUMBER: FIELD(CERT#)

DATE OF ISSUE: AUGUST 8, 2001

LABORATORY DIRECTOR: FIELD(LAB DIRECTOR)

Rev. 4/2/01
Page 1

Page 1

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WV On-Site Evaluation and W.S.M. Schedule (Drinking Water Microbiology Only)

Rev. 4/2/01
Page 2

Laboratory	Director	Telephone	Certification Number	Last On-Site Evaluation	Next On-Site Evaluation	Last W.S.M. Study	Pass/Fail

*CONFIRMED

ENVIRONMENTAL MICROBIOLOGY

FIELD(Date)

FIELD(name) FIELD(last name)

FIELD(lab)

FIELD(address)

FIELD(city, state, zip)

Dear FIELD(sal) FIELD(last name)

An on-site evaluation of your Drinking Water Bacteriological Laboratory will be conducted by FIELD(CO) on the following days:

Day 1: FIELD(1st day)

Day 2: FIELD(2nd day)

Certification criteria are based on the procedures outlined in the EPA's *Manual for the Certification of Laboratories Analyzing Drinking Water*, Fourth Edition (March 1997). The on-site evaluation will consist of observing and reviewing the actual testing procedures for which certification is sought and records that attest to the validity of data.

Enclosed is a three page Pre-Survey Information Packet. Please fill out the information on these pages and return a copy to:

**Laboratory Certification Officer
Environmental Microbiology
Office of Laboratory Services
167 - 11th Avenue
South Charleston, WV 25303**

This must be received prior to the on-site evaluation.

On the day of the scheduled evaluation, please have available the following information:

1. All Quality Control/Quality Assurance Records.

2. Drinking Water Samples for each analyst to demonstrate all test procedures for which certification is being sought. Also, non-drinking water samples to ensure coliform recovery and to demonstrate those procedures which involve source water.
3. Previously examined samples (coliform positive and negative) from all the different test methods to demonstrate reading, interpreting and reporting of test results and to further demonstrate test procedures (e.g., verification and confirmation).
4. All laboratory worksheets used in recording samples and test results.
5. Copies of Water Bacteriological Reports generated by your laboratory.
6. Quality Assurance Plan (All ten items addressed).

A tentative schedule for the evaluation will be as follows:

- | Day 1 | Day 2 |
|--|---|
| 1. Laboratory Debriefing | 1. Test Procedures |
| 2. Equipment and Facility Check | 2. Records |
| 3. Media Preparations | 3. Conference with Director,
Supervisor and Analysts |
| 4. Records | |
| 5. Test Procedures | |
| 6.* Conference with Director,
Supervisor and Analysts | |

*If the Survey is scheduled for only one day.

It will be extremely helpful if the time scheduled can be free from any interruptions.

If there are any questions about the upcoming evaluation, please do not hesitate to contact this office at (304) 558-3530.

Sincerely,

Thomas L. Ong, Microbiologist Supervisor
Laboratory Certification Officer

Enclosures

PRE-SURVEY INFORMATION

Name of Laboratory: _____
Mailing Address: _____
City: _____ State: _____ Zip: _____
Telephone: _____ FAX: _____
e-mail Address: _____

Shipping Address (For Packages - UPS will not deliver to a P.O. Box):

Personnel:

Position/Title	Name	Time in Present Position	Academic Training and/or Degree	Present Speciality	Experience (Years/Area)
Laboratory Director					
Supervisor/Consultant					
Professional (note Discipline)					
Technician/Analyst					
Technician/Analyst					
Technician/Analyst					
Technician/Analyst					
Technician/Analyst					
Technician/Analyst					
Technician/Analyst					

All On-Site Evaluations should be scheduled through: _____

All On-Site Evaluation Reports should be sent to the attention of: _____

Equipment:

Equipment	Manufacturer	Model Number
pH Meter	1. 2.	1. 2.
Balances	1. 2.	1. 2.
NIST (NBS) Thermometer	1. 2.	1. 2.
Incubator Total Coliform (35.0±0.5°C)	1. 2. 3.	1. 2. 3.
Incubator Fecal Coliform (44.5±0.2°C)	1. 2.	1. 2.
Autoclave	1. 2.	1. 2.
Hot Air Oven	1.	1.
Colony Counter	1. 2.	1. 2.
Conductivity Meter	1. 2.	1. 2.
Refrigerators	1. 2.	1. 2.
Membrane Filtration Equipment	1. 2.	1. 2.
Membrane Filtration Filters	1. 2.	1. 2.
Reagent Water Purification System	1. 2.	1. 2.

Review the Procedures listed below, and using their numbers, please complete the following:

List those procedures that you are currently certified for: _____

List those procedures that you would like to add: _____

List those procedures that you would like to delete: _____

1. **Membrane Filtration: 100 mL Sample of Drinking Water**, Total Coliform Verification with Brilliant Green Bile Broth and Fecal Coliform Verification with EC Medium.
2. **Membrane Filtration: 100 mL Sample of Drinking Water**, Total Coliform Verification with Brilliant Green Bile Broth and *E. coli* Verification with EC Medium with MUG.
3. **Membrane Filtration: Source Water**, Total Coliform Verification with Brilliant Green Bile Broth.
4. **Membrane Filtration: Source Water**, Fecal Coliforms with mFC Broth/Agar.
5. **Multi Tube Fermentation: Single 100 mL Sample Portion**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, Fecal Coliform Confirmation with EC Medium
6. **Multi Tube Fermentation: Single 100 mL Sample Portion**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, *E. coli* confirmation with EC Medium with MUG.
7. **Multi Tube Fermentation: 10 Tubes X 10 mL Sample**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, Fecal Coliform Confirmation with EC Medium.
8. **Multi Tube Fermentation: 10 Tubes X 10 mL Sample**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, *E. coli* Confirmation with EC Medium with MUG.
9. **Multi Tube Fermentation: 5 Tubes X 20 mL Sample**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, Fecal Coliform Confirmation with EC Medium.
10. **Multi Tube Fermentation: 5 Tubes X 20 mL Sample**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, *E. coli* Confirmation with EC Medium with MUG.
11. **Multi Tube Fermentation: 5 Tubes per Dilution of Sample when Three or More Dilutions are used in a Decimal Series**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, Fecal Coliform Confirmation with EC Medium.
12. **Multi Tube Fermentation: 5 Tubes per Dilution of Sample when Three or More Dilutions are used in a Decimal Series**, Lauryl Tryptose Broth for the Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, *E. coli* Confirmation with EC Medium with MUG.
13. **ONPG-MUG (Colilert): Single 100 mL Sample Portion**, Total Coliform and *E. coli*.
14. **ONPG-MUG (Colilert): 10 Tubes X 10 mL of Sample**, Total Coliform and *E. coli*.
15. **ONPG-MUG (Colilert): 5 Tubes per Dilution of Sample when Three or More Dilutions are used in a Decimal Series**, Total Coliform and *E. coli*.
16. **P/A Broth: Single 100 mL Sample Portion**, P/A Broth for Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, Fecal Coliform Confirmation with EC Medium.
17. **P/A Broth: Single 100 mL Sample Portion**, P/A Broth for Presumptive Phase, Total Coliform Confirmation with Brilliant Green Bile Broth, *E. coli* Confirmation with EC Medium with MUG.
18. **Heterotrophic Plate Count (Pour Plate Method)**
19. **Other (Please Specify):**
20. **Other (Please Specify):**

1. PERSONNEL**1.1 Supervisor/Consultant**

Supervisor of analysts has a bachelor's degree in microbiology, biology, or equivalent with at least one college-level laboratory course in environmental microbiology, and has a minimum of two weeks course training or 80 hours of on-the-job training in water microbiology at a certified laboratory, or other acceptable to the State or EPA.

If supervisor not available, consultant with same training and experience substituted, acceptable to the State, and present on-site frequently enough to satisfactorily perform a supervisor's duties.

1.2 Analyst (or equivalent job title)

Analysts has a high school education, 3 months bench experience in microbiology, training in microbiological analysis of drinking water acceptable to the State (or EPA) and a minimum of 30 days on-the-job training under an experienced analyst.

Analyst demonstrated acceptable results for precision, specificity, and satisfactory analysis on unknown samples before analyzing compliance samples.

1.3 Waiver of Academic Training Requirement

Need for specified academic training waived for highly experienced analysts.

1.4 Personnel Records

Personnel records maintained on laboratory analysts include academic background, specialized training courses completed and types of microbiological analyses conducted.

2. LABORATORY FACILITIES

Laboratory facilities clean, temperature and humidity controlled, with adequate lighting at bench top (>50 foot-candles).

Sufficient space available for processing samples, bench top equipment, storage, cleaning glassware and sterilizing materials.

Provisions made for disposal of microbiological wastes.

3. LABORATORY EQUIPMENT AND SUPPLIES**3.1 pH Meter**

Accuracy and scale graduation within ± 0.1 units.

Buffer aliquot used only once.

Electrodes maintained according to manufacturer's recommendations.

QC Meter standardized each use period with pH 7.0 and either 4.0 or 10.0 buffers, with date and buffers used recorded in log book.

QC Commercial buffer solutions dated when received and opened and discarded before expiration date.

3.2 Balance (top loader or pan)

Readability of 0.1 g.

QC Calibrated monthly using ASTM type 1, 2, or 3 weights (minimum of 3 traceable weights which bracket laboratory weighing needs).

QC Non-reference weights calibrated every six months with reference weights.

QC Annual service contract or internal maintenance protocol established, records available of most recent recalibration, and correction values on file and used.

QC Reference weight recertified if damaged or corroded.

3.3 Temperature Monitoring Device

Temperature monitoring devices graduated in 0.5°C increments (0.2°C increments for tests which are incubated at 44.5°C) or less.

No separation of fluid column of glass thermometer.

No dial thermometers used which cannot be adjusted.

QC Glass and electronic thermometers calibrated annually, dial thermometers quarterly, at the temperature used against reference NIST thermometer of one meeting the requirements of NBS Monograph SP 250-23.

QC Calibration factor marked on thermometer and calibration date and calibration factor recorded in QC record book.

QC Thermometer discarded if off more than 1.0°C from reference thermometer, reference thermometers recalibrated every 3 - 5 years.

QC Continuous recording devices used to monitor incubator temperature recalibrated annually as above.

3.4 Incubator Unit

Incubator units have an internal temperature monitoring device and maintain temperature of $35.0 \pm 0.5^\circ\text{C}$, and if used, $44.5 \pm 0.2^\circ\text{C}$.

Thermometers placed on top and bottom shelves of use area in non-portable incubators, with thermometer bulb immersed in liquid (except for electronic thermometers).

For aluminum block incubator, culture dish and tubes fit snugly.

QC Calibration-corrected temperature recorded twice daily for days in use, readings separated by at least four hours.

Water bath equipped with gable cover and pump or paddles used to circulate water (recommended for maintaining $44.5 \pm 0.2^\circ\text{C}$).

3.5 Autoclave

Autoclave has internal heat source, temperature gauge with sensor on exhaust, pressure gauge, and operational safety valve.

Maintains sterilization temperature during cycle and completes entire cycle within 45 minutes when 12 - 15 minute sterilization period used.

Depressurizes slowly enough to ensure media will not boil over and bubbles will not form in inverted tubes.

Pressure cookers not used.

QC Date, contents, sterilization time, temperature, total cycle time, and analyst's initials recorded for each cycle.

QC Copy of service contract or internal maintenance protocol and maintenance kept.

QC Maintenance conducted annually at a minimum, with record of most recent service performed available for inspection.

QC Maximum-temperature-registering thermometer or continuous recording device used each autoclave cycle and temperature recorded.

QC Overcrowding avoided.

QC Spore strips or ampules used monthly.

QC Automatic timing mechanism checked quarterly with stopwatch or other accurate timepiece or time signal.

Autoclave door seals clean and free of caramelized media.

Autoclave drain screen cleaned frequently.

3.6 Hot Air Oven

Maintains stable sterilization temperature of 170 - 180°C for at least 2 hours.

Only dry items sterilized in hot air oven.

Overcrowding avoided.

Oven thermometer graduated in 10.0°C increments or less, with bulb placed in sand during use.

QC Date, contents, sterilization time, temperature, and analyst's initials recorded for each cycle.

QC Spore strips used monthly.

3.7 Colony Counter

Colony counter, dark field model, used to count Heterotrophic Plate Count colonies.

3.8 Conductivity Meter

Suitable for checking laboratory reagent-grade water, readable in $\mu\text{mhos/cm}$ or mS/cm with measurement error not exceeding 1% or 1 $\mu\text{mhos/cm}$, whichever is more lenient.

QC Cell constant determined monthly.

In-line unit which cannot be calibrated not used to check reagent-grade water.

3.9 Refrigerator

Maintains 1 - 5°C.

Thermometer graduated in 1.0°C increments or less, with thermometer bulb immersed in liquid.

QC Temperature recorded for days in use at least once per day.

3.10 Inoculating Equipment

Sterile metal or disposable plastic loops, wood applicator sticks, sterile swabs, or sterile plastic disposable pipet tips used.

Wood applicator sticks sterilized by dry heat.

Metal inoculating loops and needles made of nickel alloy or platinum (nickel alloy loops not used for oxidase test).

3.11 Membrane Filtration (MF) Equipment

MF units of stainless steel, glass, or autoclavable plastic, not scratched or corroded and do not leak.

QC Graduations on funnels used to measure sample volume checked for accuracy have tolerance of $\leq 2.5\%$, and a record of this calibration check retained.

10X to 15X stereo microscope with fluorescent light source used to count sheen colonies.

Membrane filters approved by manufacturer for use in total coliform analysis of water.

Membrane filters of cellulose ester, white, gridmarked, 47 mm diameter, and 0.45 μm pore size.

Membrane filters and pads purchased presterilized or autoclaved before use.

Lot number and date received recorded for membrane filters.

3.12 Culture Dishes (loose or tight lids)

Presterilized plastic or sterilizable glass culture dishes used.

Sterility of glass culture dishes maintained by placement in stainless steel or aluminum canisters or wrapped in heavy aluminum foil or char-resistant paper.

Loose-lid dishes incubated in tight-fitting container with moistened paper towel.	<u>S</u>	QC Graduated cylinders and pre-calibrated containers used to measure sample volumes accurate with a tolerance of 2.5% or less.	<u>S</u>
Opened packs of disposable culture dishes resealed between use periods.	<u>S</u>	QC New lots of pre-calibrated containers validated to have 2.5% tolerance.	<u>S</u>
3.13 Pipets		3.17 Ultraviolet Lamp (if used)	
Glass pipets sterilized and maintained in stainless steel or aluminum canisters or wrapped individually in char-resistant paper or aluminum foil.	<u>S</u>	Unit cleaned monthly by wiping with soft cloth moistened with ethanol.	<u>S</u>
Pipets with legible markings, not chipped or etched.	<u>S</u>	QC If used for sanitization, tested quarterly with UV light meter or by agar spread plate method (other methods acceptable if data demonstrates they are as effective).	<u>O</u>
Opened packs of disposable pipets resealed between use periods.	<u>S</u>	4. GENERAL LABORATORY PRACTICES	
Pipets delivering volumes of 10 mL or less accurate within 2.5% tolerance.	<u>S</u>	Laboratory facilities clean, temperature and humidity controlled, and adequate lighting.	<u>S</u>
Micropipetters used with sterile tips, calibrated annually, and replaced if tolerance greater than 2.5%.	<u>O</u>	4.1 Sterilization Procedures	
3.14 Culture Tubes and Closures		Required times for autoclaving material at 121°C (except for membrane filters and pads and carbohydrate-containing media, indicated times represent minimum times, dependent upon volumes, containers, and loads):	
Tubes of borosilicate glass or other corrosion-resistant glass or plastic.	<u>S</u>	- Membrane Filters and Pads.....10 min	<u>O</u>
Culture tubes and containers of sufficient size to contain medium plus sample without being more than three quarter full.	<u>S</u>	- Carbohydrate Containing Media.....12 - 15 min	<u>S</u>
Tube closures used of stainless steel, plastic, aluminum, or screw caps with non-toxic liner; cotton plugs not used.	<u>S</u>	- Contaminated Test Material.....30 min	<u>S</u>
3.15 Sample Containers		- Membrane Filter Assemblies.....15 min	<u>S</u>
Wide-mouth plastic or non-corrosive glass bottles, with non-leaking ground glass stoppers or caps with non-toxic liners, or sterile plastic bags containing sodium thiosulfate used.	<u>S</u>	- Sample Collection Containers.....15 min	<u>S</u>
Sample container capacity at least 120 mL (4 oz.).	<u>S</u>	- Individual Glassware.....15 min	<u>S</u>
Glass stoppers covered with aluminum foil or char-resistant paper for sterilization.	<u>O</u>	- Dilution Water Blank.....15 min	<u>S</u>
Sample containers sterilized by autoclaving or (for glass bottles) dry heat.	<u>S</u>	- Rinse Water (0.5 - 1.0 L).....15 - 30 min*	<u>S</u>
Containers moistened with several drops of water before autoclaving to prevent "air lock" sterilization failure.	<u>S</u>	*Time depends upon water volume per container and autoclave load.	
Sufficient sodium thiosulfate added to sample containers before sterilization, if laboratory analyzes chlorinated water.	<u>S</u>	Autoclave membrane filters and pads and all media removed immediately after completion of sterilization cycle.	<u>O</u>
3.16 Glassware and Plasticware		Membrane filter equipment autoclaved before beginning of first filtration series (filtration series ends when 30 minutes or longer elapses after a sample filtered).	<u>S</u>
Glassware made of borosilicate glass or other corrosion-resistant glass, free of chips and cracks, with markings legible.	<u>S</u>	When UV light (254 nm) used to sanitize equipment, all supplies presterilized and QC checks conducted on UV lamp.	<u>O</u>
Plastic items clear and non-toxic to microorganisms.	<u>S</u>	UV Light used to control bacterial carry-over between samples during filtration series (optional).	<u>O</u>
		4.2 Sample Containers	
		QC Sterility of each lot of sample containers or bags confirmed by adding 25 mL of a sterile non-selective broth to at least one container, incubating at 35.0 ± 0.5°C for 24 hours and checking for growth.	<u>S</u>

4.3 Reagent-Grade Water

Only satisfactorily tested reagent water from stills or deionization units used to prepare media, reagents and dilution water/rinse water.

QC Quality of reagent water should be tested and meets the following criteria:

- Conductivity	< 2 μ mhos/cm (mS/cm) at 25°C	Monthly
- Pb, Cd, Cr, Cu, Ni, Zn	\leq 0.05 mg/L per contaminant and \leq 0.1 mg/L total	Annually
- Total Chlorine Residual*	< 0.1 mg/L	Monthly
- Heterotrophic Plate Count*	< 500 CFU/mL	Monthly
- Bacteriological Quality Of Reagent Water*	Ratio of Growth Rate 0.8 : 3.0	Annually

*See section 4.3.2 of Chapter V for additional details

4.4 Dilution/Rinse Water

Stock Buffer solution or peptone water prepared as specified in Standard Methods.

Stock buffers autoclaved or filter-sterilized and containers labeled, dated, and refrigerated.

Stored stock buffer free of turbidity.

QC Each batch of dilution/rinse water checked for sterility by adding 50 mL of water to 50 mL double strength non-selective broth, incubating at $35.0 \pm 0.5^\circ\text{C}$ for 24 hours, and checking for growth.

4.5 Glassware Washing

Distilled or deionized water used for final rinse.

QC Glassware inhibitory residue test performed on initial use of a washing compound and whenever different formulation or washing procedure used.

QC Batches of dry glassware spot-checked for pH reaction.

Laboratory glassware washed with detergent designed for laboratory use.

5. ANALYTICAL METHODOLOGY**5.1 General**

Only analytical methodology specified in Total Coliform Rule and Surface Water Treatment Rule used for compliance samples.

Laboratory certified for all analytical methods it uses for compliance purposes.

Laboratory certified for at least one total coliform method and one fecal coliform method or *E. coli* method.

Laboratory certified for a second total coliform method, if one method cannot be used for some drinking waters.

Laboratory that enumerates heterotrophic bacteria (i.e., HPC) for compliance with the Surface Water Treatment Rule certified for the Pour Plate Method.

Absorbent pads, when used, saturated with liquid medium and excess removed.

Water sample shaken vigorously (about 25 times) before analysis

QC If no total coliform-positive results occur during a quarter, laboratory performs coliform procedure using a known coliform-positive, fecal coliform- and/or *E. coli*-positive control to spike the sample.

Sample volume analyzed for total coliforms in drinking water is 100 ± 2.5 mL.

Media -

Dehydrated or prepared media manufactured commercially used (strongly recommended).

Dehydrated media stored in cool dry location and caked or discolored dehydrated media discarded.

QC Laboratory media preparation records include:

- Date of Preparation
- Type of Medium
- Lot Number
- Sterilization Time and Temperature
- Final pH
- Technicians Initial's

QC For liquid media prepared commercially, the following are recorded:

- Date Received
- Type of Medium
- Lot Number
- pH Verification

QC Liquid media prepared commercially discarded by manufacturer's expiration date.

QC Each new lot of dehydrated and prepared commercial medium checked before use with positive and negative culture controls and results recorded.

QC Each new batch of laboratory-prepared medium checked before use with positive and negative controls and results recorded.

Prepared plates refrigerated in sealed plastic bags or containers not longer than two weeks, with bag or container dated with preparation or expiration date.

Loose-cap tubes of broth stored at $< 30^\circ\text{C}$ no longer than two

Refrigerated medium incubated at room temperature overnight before use and discarded if growth observed.	<u>S</u>	Swab used to transfer presumptive total coliform-positive culture can inoculate up to three different media (e.g., EC medium, LTB and BGLBB in that order).	<u>S</u>
QC Parallel testing performed between a newly approved test procedure and another EPA-approved procedure for several months and/or several seasons (recommended).	<u>O</u>	5.3 Multiple Tube Fermentation Technique (MTF or MPN)(for total coliforms in drinking water)	
5.2 Membrane Filter (MF) Technique (for total coliforms in drinking water)		Total sample volume of 100 mL examined by test configuration found in 141.21 (f)(3) or Appendix G.	<u>S</u>
Media -		Media -	
M-Endo broth or agar or LES endo agar in single step or enrichment technique used.	<u>S</u>	LTB used in presumptive test and BGLBB in confirmed test.	<u>S</u>
Ethanol not denatured.	<u>S</u>	LB used if system conducts at least 25 parallel tests between this medium and LTB and demonstrates false-positive rate and false-negative rate for total coliforms of less than 10%, with comparison documented and records retained.	<u>O</u>
Medium prepared in sterile flask and dissolved using boiling water bath or hot plate with stir bar.	<u>S</u>	LTB pH 6.8 ± 0.2 .	<u>S</u>
Medium not boiled.	<u>S</u>	BGLBB pH 7.2 ± 0.2 .	<u>S</u>
LES Endo agar medium pH 7.2 ± 0.2 , M-Endo medium pH 7.2 ± 0.1 .	<u>S</u>	Test medium concentration adjusted to compensate for sample volume so resulting medium single strength after sample addition.	<u>S</u>
MF broth refrigerated no longer than 96 hours, poured MF agar plates no longer than 2 weeks, ampuled M-Endo broth as per manufacturer's expiration date.	<u>S</u>	If single 100 mL sample volume used, inverted vial replaced with acid indicator.	<u>S</u>
Uninoculated media discarded if growth or surface sheen observed.	<u>S</u>	Medium autoclaved at 121°C for 12 - 15 minutes.	<u>S</u>
QC Sterility check conducted on each funnel in use at beginning and end of each filtration series (filtration series ends when 30 minutes or more elapse between sample filtrations).	<u>S</u>	Inverted vials in sterile medium free of bubbles and at least one-half to two-thirds covered after water sample added.	<u>S</u>
QC If sterility control indicates contamination, all data rejected and another sample requested.	<u>S</u>	Refrigerated sterile MTF media incubated overnight at room temperature before use, with tubes/bottles showing growth and/or bubbles discarded.	<u>S</u>
Funnels rinsed with two or three 20 - 30 mL portions of sterile rinse water after each sample filtration to prevent carry-over.	<u>S</u>	Prepared broth media stored in dark at $< 30^\circ\text{C}$ for no longer than 3 months in screw-cap tube/bottles, two weeks for those with loose-fitting closures.	<u>S</u>
Inoculated medium incubated at $35.0 \pm 0.5^\circ\text{C}$ for 22 - 24 hours.	<u>S</u>	Media discarded if evaporation exceeds 10% of original volume.	<u>S</u>
Samples resulting in confluent or too numerous to count (TNTC) growth invalidated unless total coliforms detected (if laboratory performs verification test before invalidation and test is total coliform-positive, sample is reported as such, but if test is total coliform-negative, sample is invalidated).	<u>S</u>	Inoculated medium incubated at $35.0 \pm 0.5^\circ\text{C}$ for 24 ± 2 hours.	<u>S</u>
Sample not invalidated if membrane filter contains at least one sheen colony.	<u>S</u>	If no gas or acid detected, inoculated medium incubated for another 24 hours.	<u>S</u>
All sheen colonies verified (up to a maximum of five) using either single strength (LB) or (LTB) and single strength (BGLBB) or an EPA-approved cytochrome oxidase and beta-galactosidase rapid test procedure.	<u>S</u>	All samples showing turbid culture (i.e., heavy growth, opaque) in the absence of gas/acid production invalidated and another sample collected from the same location (if laboratory performs confirmed test on turbid culture and confirmed test is total coliform-positive, sample reported as such, but if total coliform-negative, sample is invalidated).	<u>S</u>
When picking individual colonies, up to five red questionable sheen colonies and/or red non-sheen colonies verified to include different types or entire MF surface is swabbed.	<u>S</u>	All 24- and 48- hour gas-positive or acid-positive tubes confirmed using BGLBB.	<u>S</u>
When EC medium or EC medium + MUG used, colonies transferred by employing one option specified by 141.21 (f)(5).	<u>S</u>	Completed Test not required.	

When MTF test used on water supplies that have a history of confluent growth or TNTC by the MF procedure, all presumptive tubes with heavy growth without gas/acid production submitted to confirmed test and fecal coliform/*E. coli* test to check for coliform suppression.

5.4 Presence-Absence (P-A) coliform Test (for drinking water)

Medium -

When six-times formulation strength medium used, medium filter-sterilized, not autoclaved.

Medium autoclaved for 12 minutes at 121°C with total time in autoclave less than 30 minutes and with space between bottles.

Medium pH 6.8 ± 0.2.

Prepared medium stored in the dark at < 30°C for no longer than 3 months.

Stored medium discarded if evaporation exceeds 10% of original volume.

100 mL sample inoculated into P-A culture bottle.

Medium incubated at 35.0 ± 0.5°C and observed for yellow color (acid) after 24 and 48 hours.

Yellow cultures confirmed in BGLBB and fecal coliform/*E. coli* test conducted.

Non-yellow turbid culture in P-A medium invalidated and another sample obtained from the same location (if confirmed test performed and sample is total coliform-positive, sample is reported as such, but if confirmed test is negative, sample invalidated).

5.5 Fecal Coliform Test (using EC Medium for fecal coliforms in drinking or source water, or A-1 Medium for fecal coliforms in source water only)

EC Medium used to determine whether total coliform-positive culture taken from distribution system contains fecal coliforms, in accordance with Total Coliform Rule.

EC Medium used to enumerate fecal coliforms in source water, in accordance with Surface Water Treatment Rule, using cultures transferred from each total coliform-positive tube.

Three sample volumes (10, 1, and 0.1 mL) and 5 or 10 tubes/sample volume used.

Autoclaved at 121°C for 12 - 15 minutes.

Medium pH 6.9 ± 0.2.

Inverted vials free of bubbles and at least one-half to two-thirds covered after sample added.

Tubes with loose-fitting closures used within two weeks, tightly closed screw-cap tubes no longer than 3 months when held in the dark at < 30°C.

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Refrigerated medium incubated at room temperature overnight before use and tubes with growth or bubbles in vials discarded.

Alternatively, A-1 Medium used to enumerate fecal coliforms in source water, in accordance with Surface Water Treatment Rule.

A-1 medium not used for drinking water samples.

Three sample volumes of source water (10, 1, and 0.1 mL) and 5 or 10 tubes/sample volume used.

Autoclaved at 121°C for 10 minutes.

Medium pH 6.9 ± 0.1.

Inverted vials free of bubbles and at least one-half to two-thirds covered after water sample added.

Loose-cap tubes stored in dark at room temperature no longer than 2 weeks, tightly closed screw-cap tubes no longer than 3 months with held in the dark at < 30°C.

Water level in water bath above upper level of medium in culture tubes.

EC Medium incubated at 44.5 ± 0.2°C for 24 ± 2 hours.

A-1 Medium incubated at 35.0 ± 0.5°C for 3 hours, then at 44.5 ± 0.2°C for 21 ± 2 hours.

Any gas detected in inverted vial considered fecal coliform-positive.

5.6 Chromogenic/Fluorogenic Substrate Tests (MMO-MUG Test [Colilert] for total coliforms in source water and total coliforms and *E. coli* in drinking water; Colisure Test for total coliforms and *E. coli* in drinking water)

Media -

Purchased commercially available source only.

Media protected from light.

Colisure medium refrigerated until use, brought to room temperature before adding sample.

Each lot of medium checked for autofluorescence before use with 366-nm ultraviolet light with 6 watt bulb.

Medium which exhibits faint fluorescence discarded and another lot used.

Medium plus sample which exhibits color change before incubation discarded and another batch of medium used.

QC Each lot of medium checked by inoculating sterile water containing the medium with a MUG-positive *E. coli* strain, a MUG-negative coliform, and a non-coliform and analyzing them.

If Quanti-Tray or Quanti-Tray 2000 test used with Colilert medium, sealer checked monthly to determine leakage.

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Glass bottles that contain inoculated medium checked with 366-nm ultraviolet light source with 6 watt bulb and discarded if fluorescence observed before incubation.	<u>S</u>	Medium pH 6.9 ± 0.2 .	<u>S</u>
For enumeration of total coliforms in source water with Colilert Test, 5 or 10 tube MTF, Quanti-Tray, or Quanti-Tray 2000 used for each sample dilution tested.	<u>S</u>	Inverted vial omitted (optional).	<u>S</u>
For chromogenic/fluorogenic substrate test only, sterile dechlorinated tap water, deionized water, or distilled water used as dilution water.	<u>S</u>	Test tubes and autoclaved medium checked for autofluorescence before use with 366-nm UV light.	<u>S</u>
For determining presence of total coliforms in drinking water by chromogenic/fluorogenic substrate test, 10 tubes each containing 10 mL water sample or single vessel containing 100 mL sample used.	<u>S</u>	If fluorescence exhibited, non-fluorescing tubes or another lot of medium that does not fluoresce used or MUG-positive (<i>E. coli</i>) and a MUG-negative (e.g. uninoculated) control included for each analysis.	<u>S</u>
For Colilert Test:		Prepared medium in tubes with loose-fitting closures used within two weeks, or three months for tightly closed screw-cap tubes when held in the dark at $< 30^{\circ}\text{C}$.	<u>S</u>
Sample incubated at $35.0 \pm 0.5^{\circ}\text{C}$ for 24 hours (for Colilert-18 Test, sample incubated 18 hours).	<u>S</u>	Uninoculated medium with growth discarded.	<u>S</u>
Yellow color in medium equal to or greater than reference comparator indicates total coliform presence.	<u>S</u>	QC Each lot of commercially prepared medium and each batch of laboratory-prepared medium checked by inoculating LTB with positive and negative culture controls, incubating at $35.0 \pm 0.5^{\circ}\text{C}$ for 24 hours and then transferring to EC Medium + MUG for further incubation at $44.5 \pm 0.2^{\circ}\text{C}$ for 24 hours, with results read and recorded.	<u>S</u>
Medium with a yellow color lighter than the comparator and incubated for another 4 hours (28 hours total).	<u>S</u>	Water level of water bath above upper level of medium.	<u>S</u>
Yellow color in medium lighter than comparator incubated for 28 hours recorded as negative.	<u>S</u>	Incubated at $44.5 \pm 0.2^{\circ}\text{C}$ for 24 ± 2 hours.	<u>S</u>
For Colisure Test:		Fluorescence checked using UV lamp (366-nm) with 6 watt bulb in a darkened room.	<u>S</u>
Sample incubated at $35.0 \pm 0.5^{\circ}\text{C}$ for 28 to 48 hours.	<u>O</u>	5.8 Nutrient Agar + MUG Test (for <i>E. coli</i>)	
Total coliform positive sample indicates color change from yellow to magenta.	<u>O</u>	Medium -	
For <i>E. coli</i> Determination:		Medium autoclaved in 100 mL volumes at 121°C for 15 minutes.	<u>O</u>
UV lamp (366-nm, 6 watt) shone on total coliform-positive bottles/tubes in darkened room with blue fluorescence indicating <i>E. coli</i> presence.	<u>S</u>	MUG added to Nutrient Agar before autoclaving or Nutrient Agar + MUG purchased commercially.	<u>O</u>
QC Air-type incubators tested to determine time necessary for cold 100 mL water sample (or set or 100 mL water samples) to reach incubation temperature of 35°C , ensuring specified incubation time at the temperature is followed.	<u>S</u>	Final MUG concentration 100 $\mu\text{g/mL}$.	<u>O</u>
Colilert/Colisure Test not used to confirm total coliforms on membrane filters.	<u>S</u>	Medium pH 6.8 ± 0.2 .	<u>O</u>
Colilert/Colisure Test not used to confirm total coliforms in MTF or P-A tests.	<u>S</u>	Medium in petri dishes stored refrigerated in plastic bag or tightly closed container and used within two weeks.	<u>O</u>
5.7 EC Medium + MUG (for <i>E. coli</i>)		Refrigerated sterilized medium incubated at room temperature overnight and plates with growth discarded.	<u>O</u>
Total coliform-positive culture transferred to EC medium + MUG.	<u>S</u>	QC Quality of medium lot/batch evaluated by filtering or spot-inoculating positive and negative control cultures onto membrane filter on M-Endo medium, incubating at $35.0 \pm 0.5^{\circ}\text{C}$ for 24 ± 2 hours, then transferring filter to NA + MUG and further incubating at $35.0 \pm 0.5^{\circ}\text{C}$ for 4 hours, with results read and recorded.	<u>O</u>
Medium -		Filter containing total coliform colony(ies) transferred to surface of Nutrient Agar + MUG medium.	<u>O</u>
MUG added to EC medium before autoclaving or commercially available EC + MUG used.	<u>S</u>	Before incubation, presence of each sheen colony marked on petri dish lid with permanent marker, and lid and base marked to realign lid when removed.	<u>O</u>

For total coliform verification test, portion of colony transferred with needle before or after NA + MUG incubation.	<u>O</u>	Inoculum absorbed completely before plates inverted and incubated at 20 - 28°C for 5 - 7 days.	<u>O</u>
Alternatively, membrane filter surface swabbed with sterile cotton swab after 4 hour incubation and transferred to total coliform verification test.	<u>O</u>	For Membrane Filter Technique:	
Inoculated medium incubated at 35.0 ± 0.5°C for 4 hours.	<u>O</u>	Volume filtered to yield between 20 - 200 colonies.	<u>O</u>
Fluorescence checked using UV lamp (366-nm) with 6 watt bulb in a darkened room, with any fluorescence in halo around sheen colony considered positive for <i>E. coli</i> .	<u>O</u>	Filter transferred to petri dish containing 5 mL solidified R2A medium and incubated at 20 - 28°C for 5 - 7 days.	<u>O</u>
5.9 Heterotrophic Plate Count (for enumerating heterotrophs in drinking water)	<u>O</u>	Petri dishes with loose-fitting lids placed in container with close fitting lid and moistened paper towels.	<u>O</u>
Pour Plate Method used for enumerating heterotrophic bacteria in drinking water and for testing reagent grade water:	<u>S</u>	Colonies counted using stereoscopic microscope at 10 - 15X magnification.	<u>O</u>
For systems granted a variance from Total Coliform Rule's maximum contaminant level, any method in Standard Methods used with R2A medium for enumerating heterotrophic bacteria in drinking water.	<u>S</u>	For Pour Plate and Spread Plate Techniques:	
Media (plate count agar [tryptone glucose extract agar] and R2A agar) -		Colonies counted manually using dark field colony counter.	<u>S</u>
Plate count agar pH 7.0 ± 0.2.	<u>S</u>	Only plates with 30 to 300 colonies counted, except for plates inoculated with 1.0 mL of undiluted sample.	<u>S</u>
R2A agar pH 7.2 ± 0.2.	<u>O</u>	Fully automatic colony counters not used.	<u>S</u>
(For Pour Plate Method) melted agar tempered at 44 - 46°C in water bath before pouring, held no longer than 3 hours, and melted only once.	<u>S</u>	QC Medium sterility verified by pouring final control plate and data rejected if control contaminated.	<u>S</u>
(For Spread Plate Method) 15 mL of R2A medium or other medium poured into petri dish and solidified.	<u>O</u>	5.10 Membrane Filter technique (for enumerating total coliforms in source water)	
Refrigerated medium in bottles or screw-capped tubes stored for up to 6 months, petri dishes with medium for up to 2 weeks (one week for R2A prepared petri dishes).	<u>S</u>	Same as Section 5.2, Membrane Filter Technique (for total coliforms in drinking water), except invalidation does not apply.	<u>S</u>
Countable plates obtained for most potable waters by plating 1.0 mL and/or 0.1 mL volume of undiluted sample.	<u>O</u>	Appropriate sample dilutions used to yield 20 to 80 total coliform colonies per membrane.	<u>S</u>
At least duplicate plates per dilution used.	<u>S</u>	Initial counts adjusted based upon verified data.	<u>S</u>
For Pour Plate Method:	<u>S</u>	QC If two or more analysts available, each counts total coliform colonies on same membrane monthly and agree within 10%.	<u>S</u>
Sample pipetted aseptically into bottom of petri dish and then 12 - 15 mL tempered melted agar added.	<u>S</u>	5.11 Multiple Tube Fermentation Technique (for enumerating total coliforms in source water)	<u>S</u>
Sample mixed with spillage avoided.	<u>S</u>	At least three series of 5 tubes each with appropriate sample dilutions of source water used.	<u>S</u>
After solidification on level surface, plates inverted and incubated at 35.0 ± 0.5°C for 48 ± 3 hours.	<u>S</u>	Same as Section 5.3, Multiple Tube Fermentation Technique (for total coliforms in drinking water) except on sample invalidation.	<u>S</u>
Plates stacked no more than four high.	<u>S</u>	All samples invalidated which produce turbid growth in the absence of gas/acid production in LTB or LB and another sample obtained, which may be tested using another method.	<u>S</u>
For Spread Plate Method:	<u>O</u>	Alternatively, confirmed test performed on turbid culture in the absence of gas/acid production and, if total coliform-positive, most probable number reported, or if total coliform-negative, sample invalidated and another requested.	
0.1 or 0.5 mL of sample or dilution pipetted onto surface of predried agar plate and inoculum spread over entire agar surface using sterile bent glass rod.			

5.12 Fecal Coliform Membrane Filter Procedure (for enumerating fecal coliforms in source water)**Media -**

m-FC Broth (with or without agar) sterilized by bringing to boiling point, not autoclaved.

Medium final pH 7.4 ± 0.2 .

Prepared medium refrigerated and broth discarded after 96 hours, poured agar medium in petri dishes after 2 weeks.

Uninoculated medium discarded if growth observed.

Sample volumes yield 20 - 60 fecal coliform colonies per membrane for at least one dilution.

QC Funnels rinsed with two or three 20 - 30 mL portions of sterile rinse water after each sample filtration to prevent carry-over.

QC Sterility checked at beginning and end of each filtration series and all data rejected from affected samples and resampling requested if controls contaminated.

Inoculated medium incubated at $44.5 \pm 0.2^\circ\text{C}$ for 24 ± 2 hours.

QC If two or more analysts available, each counts fecal coliform colonies on same membrane monthly and counts agree within 10%.

6. SAMPLE COLLECTION, HANDLING, AND PRESERVATION**6.1 Sample Collector**

Trained in aseptic sampling procedures and, if required, approved by appropriate regulatory authority or designated representative.

6.2 Sampling

Sample representative of water distribution system.

Water taps used for sampling free of aerators, strainers, hose attachments, mixing type faucets, and purification devices.

Cold water tap used.

Service line cleared before sampling by maintaining steady water flow for at least 2 minutes.

At least 100 mL sample volume collected, allowing one inch air space in container.

Sample information form completed immediately after sample collection.

Source water representative of supply, collected not too far from intake at a reasonable distance from shore.

6.3 Sample Icing

Samples held at $< 10^\circ\text{C}$ during transit to laboratory

6.4 Sample Holding/Travel Time

Time from sample collection to initiation of analysis for total coliforms, fecal coliforms, or *E. coli* does not exceed 30 hours for drinking water samples.

Time from sample collection to initiation of analysis for total coliforms and fecal coliforms in source water and heterotrophic bacteria in drinking water does not exceed 8 hours.

All samples analyzed on day of receipt by laboratory, unless laboratory receives sample late in day and then refrigerates sample overnight and begins analysis within holding time.

6.5 Sample Information Form

Entered on sample information form in indelible ink:

- Name of system (PWSS identification number if available)
- Sample identification (if any)
- Sample site location
- Sample type (e.g. routine, repeat, raw or process)
- Date and time of collection
- Analysis required
- Disinfectant residual
- Name of sampler and organization (if not water system)
- Samplers initials
- Person(s) transporting sample from system to laboratory (if not sampler)
- Transportation condition (e.g. $< 10^\circ\text{C}$, protection from sunlight), if shipper used, shipping records available
- Any remarks

6.6 Chain-of-Custody

Applicable regulations followed by collectors and laboratory.

7. QUALITY ASSURANCE

Written QA Plan prepared, followed, and available for inspection.

8. RECORDS AND DATA REPORTING**8.1 Legal Defensibility**

Compliance monitoring data legally defensible by keeping thorough and accurate records.

QA Plan and/or SOP's describe policies and procedures used by facility for record retention and storage.

Chain-of-Custody procedures used if samples expected to become part of legal action.

8.2 Maintenance of Records

Microbiological analyses records kept by or accessible to laboratory for at least 5 years or until next certification data audit completed, whichever is longer.

Client water system notified before disposal of records.

8.3 Sampling Records

Data recorded in ink with changes lined through such that original entry visible and changes initialed and dated.

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Sampling records include:

- Sample information form, from Section 6.5
- Date and time of sample receipt by laboratory
- Name of laboratory person receiving sample
- Any deficiency in sample condition noted, sample, at a minimum, flagged
- If sample transit time exceeds 30 hours (8 hours for source water samples), sample tagged

SSSSS**8.4 Analytical Records**

Data recorded in ink with changes lined through such that original entry visible and with changes initialed and dated.

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Analytical records include:

- Laboratory sample identification
- Date and time analysis begins
- Laboratory and person(s) responsible for performing analysis
- Analytical technique or method used
- All items marked QC
- Results of analysis

SSSSSS**8.5 Preventive Maintenance**

Preventive maintenance and repair records for all instruments and equipment kept for 5 years.

S**9. ACTION RESPONSE TO LABORATORY RESULTS****9.1 Testing Total Coliform-Positive Cultures**

For the Total Coliform Rule, all total coliform-positive cultures tested for presence of either fecal coliforms or *E. coli*.

S**9.2 Notification of Positive Results**

For Total Coliform Rule, proper authority notified promptly by laboratory of positive total coliform, fecal coliform or *E. coli* results.

S

Total coliform-positive results based on confirmed phase for MTF Technique and P-A Coliform Test or verified test for MF Technique (no requirement for confirmation of positive Colilert/Colisure, fecal coliform or *E. coli* tests).

S**9.3 Invalidation of Total Coliform-Negative Sample**

For Total Coliform Rule, proper authority notified when results indicate non-coliforms may have interfered with total coliform analysis.

S

Equipment:

Equipment	Manufacturer	Model Number
pH Meter	1. 2.	1. 2.
Balances	1. 2.	1. 2.
NIST (NBS) Thermometer	1. 2.	1. 2.
Incubator Total Coliform (35.0±0.5°C)	1. 2.	1. 2.
Incubator Fecal Coliform (44.5±0.2°C)	1. 2.	1. 2.
Autoclave	1. 2.	1. 2.
Hot Air Oven	1. 2.	1. 2.
Colony Counter	1. 2.	1. 2.
Conductivity Meter	1. 2.	1. 2.
Refrigerators	1. 2.	1. 2.
Membrane Filtration Equipment	1. 2.	1. 2.
Membrane Filtration Filters	1. 2.	1. 2.
Reagent Water Purification System	1. 2.	1. 2.

ENVIRONMENTAL MICROBIOLOGY

**Report of an On-Site Evaluation of
[LABORATORY]
Drinking Water Microbiology Laboratory
[STREET ADDRESS]
[CITY, STATE ZIP]**

**on
[DATE(S) OF EVALUATION]
By
[CERTIFICATION OFFICER], Microbiologist [LEVEL]
Laboratory Certification Officer**

Date of Report: [DATE]

- I. At the time of the on-site evaluation, the following items were not in compliance with the minimum standards set forth in the *EPA's Manual for the Certification of Laboratories Analyzing Drinking Water*, Fourth Edition (March 1997):**

Item

Deviation

**[SECTION TITLE FROM CHAPTER V FROM WHICH DEVIATION(S)
LISTED BELOW OCCURRED]**

[ITEM NUMBERS FROM CHAPTER V OF THE EPA'S MANUAL FOR THE CERTIFICATION OF LABORATORIES ANALYZING DRINKING WATER ARE LISTED AT LEFT UNDER THE "ITEM" COLUMN. IF A RECORD IS REQUIRED IN THE RESPONSE, THEN THE ITEM NUMBER IS MARKED WITH A "*". A "+" INDICATES A REPEAT DEVIATION FROM THE PREVIOUS ON-SITE EVALUATION. A WRITTEN EXPLANATION OF THE DEVIATION IS LISTED TO THE RIGHT OF THE NUMBER UNDER THE "DEVIATION" COLUMN]

- II. At the time of the on-site evaluation, the following item(s) were listed as undetermined due to conditions that existed at that time: (These item(s) must also be addressed)**

[SAME PROCEDURE AS SECTION I. ALSO DESCRIBE WHY ITEM WAS UNDETERMINED.]

III. Comments, Suggestions and Recommendations

[LIST BY NUMERICAL ORDER: 1., 2., 3.,...ETC...]

IV. Conclusion

[GENERAL COMMENT ABOUT LABORATORY]. Therefor, the laboratory will have until [MONTH, DATE, YEAR] to respond in writing to all of the above items. Although all items need t be addressed, those marked with an “*” require the submission of the appropriate QA/QC records as verification. Those records marked with a “+” are repeat deviations that occurred on the previous on-site evaluation and must be immediately corrected:

If there are any questions regarding this report or further assistance is needed, please do not hesitate to call this office.

[LCO], Microbiologist [LEVEL]
Laboratory Certification Officer

ENVIRONMENTAL MICROBIOLOGY

[DATE]

[CONTACT]
[LABORATORY]
[STREET ADDRESS]
[CITY, STATE ZIP]

Dear, [CONTACT (FIRST NAME)]

Your response to the [MONTH, DATE YEAR] On-Site Evaluation was due. A response has not been received as of [TODAY'S DATE].

Please respond within one week of receipt of this letter. Any extensions must be requested in writing. Failure to respond to an on-site evaluation can result in the loss of certification.

Sincerely,

[LCO], Microbiologist [LEVEL]

ENVIRONMENTAL MICROBIOLOGY

DATE

[CONTACT]
[LABORATORY]
[STREET ADDRESS]
[CITY, STATE ZIP]

Dear [CONTACT, MR/MS LAST NAME]

Your response to the [MONTH, DATE YEAR] On-Site Evaluation was received [MONTH, DATE YEAR]. After a review of the records submitted, there were still items of concern.

1.

Please address the above item(s) in writing within 30 days ending [MONTH, DATE YEAR]. If you have any questions, please do not hesitate to call.

Sincerely,

Thomas L. Ong, Microbiologist Supervisor
Laboratory Certification Officer

ENVIRONMENTAL MICROBIOLOGY

**Report of an On-Site Evaluation of
[LABORATORY]
Drinking Water Microbiology Laboratory
[STREET ADDRESS]
[CITY, STATE ZIP]**

**on
[DATE(S) OF EVALUATION]**

**By
[CERTIFICATION OFFICER], Microbiologist [LEVEL]
Laboratory Certification Officer**

Date of Report: [DATE]

**Status: Certified for the Microbiological Analysis of Drinking Water - [LIST TESTS
(AND ANALYTES)]**

I. At the time of the on-site evaluation, the following items were not in compliance with the minimum standards set forth in the *EPA's Manual for the Certification of Laboratories Analyzing Drinking Water*, Fourth Edition (March 1997):

<u>Item</u>	<u>Deviation</u>
--------------------	-------------------------

[SECTION TITLE FROM CHAPTER V FROM WHICH DEVIATION(S) LISTED BELOW OCCURRED]	
---	--

[ITEM NUMBERS FROM CHAPTER V OF THE EPA'S MANUAL FOR THE CERTIFICATION OF LABORATORIES ANALYZING DRINKING WATER ARE LISTED AT LEFT UNDER THE "ITEM" COLUMN. IF A RECORD IS REQUIRED IN THE RESPONSE, THEN THE ITEM NUMBER IS MARKED WITH A "*". A "+" INDICATES A REPEAT DEVIATION FROM THE PREVIOUS ON-SITE EVALUATION. A WRITTEN EXPLANATION OF THE DEVIATION IS LISTED TO THE RIGHT OF THE NUMBER UNDER THE "DEVIATION" COLUMN]

II. At the time of the on-site evaluation, the following item(s) were listed as undetermined due to conditions that existed at that time: (These item(s) must also be addressed)

[SAME PROCEDURE AS SECTION I. ALSO DESCRIBE WHY ITEM WAS
UNDETERMINED.]

III. Comments, Suggestions and Recommendations

[LIST BY NUMERICAL ORDER: 1., 2., 3.,...ETC...]

IV. Conclusion

Documentation was received on [MONTH, DATE, YEAR] indicating that all of the above
deviations have been corrected.

[ANY ADDITIONAL COMMENTS]

The following analysts participated in and are certified for the following procedures:

	[TEST AND ANALYTES]	[TEST AND ANALYTES]	[TEST AND ANALYTES]
[ANALYST]	C	C	C
[ANALYST]	C	C	C
[ANALYST]	C	C	C

C = Certified

The next on-site evaluation will be scheduled on or before [MONTH, DATE, YEAR].

If there are any questions regarding this report or further assistance is needed, please do not
hesitate to call this office.

[LCO], Microbiologist [LEVEL]
Laboratory Certification Officer

TRACKING CHART - ON-SITE EVALUATIONS

[illegible]

Date of On-Site	Laboratory	LCO	Report Mailed	Response Due	Response Rec'd	Acceptable? (yes/no)	Additional Responses Rec'd	Final Report Mailed

WEST VIRGINIA DEPARTMENT OF HEALTH & HUMAN RESOURCES

**Bureau For Public Health
Office of Laboratory Services**

Application for Laboratory Certification

Drinking Water Analyses

Date _____

Name of Laboratory _____

Address _____

Telephone Number _____

Name of Director _____

Contact Person _____

Test Category	Add	Annual Fee
Microbiology		
Chemistry (Inorganics)		
Chemistry (TTHM/VOC)		
Chemistry (All other organics Pest./Herb.)		
		\$

MAKE CHECKS PAYABLE TO:

WVOLS

(West Virginia Office of Laboratory Services)

This application must be accompanied by the information requested on the attached pages.
Questions concerning the application may be directed to the Chemistry Certification Officer at (304) 558-0197 or the Microbiology Certification Officer at (304) 558-3530.

SEND APPLICATION PACKET TO:

**Office of Laboratory Services
Environmental Certification
Program
167 - 11th Avenue
South Charleston, WV 25303**

ENVIRONMENTAL MICROBIOLOGY

DATE

FIELD(sal) FIELD(name) FIELD(last name)
FIELD(lab)
FIELD(address)
FIELD(city, state, zip)

Dear FIELD(sal) FIELD(last name)

Your request to be certified for Drinking Water Microbiology in the State of West Virginia was received FIELD(date). Although West Virginia does not have reciprocity, we do certify laboratories out of state. West Virginia uses the criteria set forth in the EPA's *Manual for the Certification of Laboratories Analyzing Drinking Water* (copy available on the internet at - <http://www.epa.gov/ogwdw000/certlab/lab.html>). Although we do not normally perform an on-site evaluation for out of state laboratories, we do reserve the right at your laboratories expense. In order to receive certification for drinking water microbiology in West Virginia, you must:

1. Be currently certified in FIELD(state) or whichever state the laboratory is located in for Drinking Water Microbiology. This certification must be maintained.
2. Submit copies of all QC Records pertaining to Drinking Water Microbiology for the last six months. This includes daily work sheets (bench sheets) and copies of final report forms.
3. Submit a copy of your laboratories QC Plan for Drinking Water Microbiology.
4. Submit a copy of your last on-site evaluation including the check list.
5. Submit a copy of your last Performance Evaluation Results.

Once the above items have been received and reviewed, you will be notified in writing of our findings. If everything is in order, an application will be forwarded. There is an annual fee of \$500.00 that is renewable every December. **(Do not send any money until approval has been given).** Once the application and fee is received, you will receive a certificate and certification number.

If you have any questions or need further assistance, please do not hesitate to call.

Sincerely,

Thomas L. Ong, Microbiologist Supervisor
Laboratory Certification Officer

/tlo

ENVIRONMENTAL MICROBIOLOGY

DATE

FIELD(First Name) FIELD(Last Name)
FIELD(Laboratory)
FIELD(Street Address)
FIELD(City), FIELD(State) FIELD(Zip)

Dear FIELD(Sal.) FIELD(Last Name),

Written documentation supporting your application for Drinking Water Microbiological Certification in West Virginia was received FIELD(Doc. Rec'd). The information submitted has been thoroughly reviewed and found to be acceptable.

Enclosed is an application that must be completed and submitted along with the appropriate fee of FIELD(Fee) for [DATE] Certification. Certification for Drinking Water Microbiology in West Virginia runs from January through December. There is an annual fee of \$500.00 that is renewable every December. Once the application and fee are received, a certificate with a certification number will be forwarded.

Also enclosed is a Water Bacteriological Report form that has been customized with your laboratories name and certification number. Please make copies of this form. All compliance testing from West Virginia sources must be reported on this form to:

Office of Environmental Health Services
Environmental Engineering Division, Suite 418
815 Quarrier St.
Charleston, WV 25301

The Environmental Engineering Division must be immediately notified of any compliance samples that are positive for Total Coliform by telephone: (304) 558-2981 or by FAX: (304) 558-0691.

Your certification status in West Virginia is dependant upon you certification status in your home state. Any change in certification status in your home state must be immediately reported to this office. Failure to do so will result in the loss of certification in West Virginia.

Once your application and fee are received, your certification status is West Virginia will be as follows:

Certification Status	Procedures
FIELD(Cert. Stat.-1)	FIELD(Procedure-1)
FIELD(Cert. Stat.-2)	FIELD(Procedure-2)

If you have any questions, please do not hesitate to call.

Sincerely,

Thomas L. Ong, Microbiologist Supervisor
Laboratory Certification Officer

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
Analytical Services and Quality Assurance Branch
701 Mapes Road
Fort Meade, MD 20755-5350**

July 16, 2003

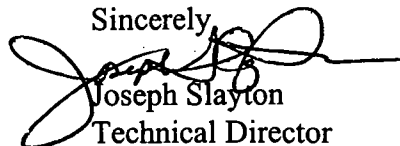
Andrea M. Labik, Sc. D.
Director
West Virginia Department of Health & Human Resources
Bureau for Public Health
Office of Laboratory Services
167 11th Avenue
South Charleston, West Virginia 25303-1137

Dear Dr. Labik:

The assessment team has completed the report resulting from the on-site review of WV's SDWA Laboratory Certification Program on June 25-26, 2003. We request that you provide a written corrective action plan to address the listed findings within 30 days of receipt of this report (August 18, 2003).

If you have any questions please call me at 410-305-2653 or E-mail (Slayton.joe@epa.gov).

Sincerely,



Joseph Slayton
Technical Director

cc:

Robin Costas (3ES20)
Richard Rogers (3WP22)
Charles Jones, Jr. (3ES10)
Wanda Johnson (3WP22)

**SDWA Lab Certification Program:
On-Site Review**

Rev.7-16-03

**West Virginia Department of Health and Human Resources
Bureau for Public Health
Office of Laboratory Services
Environmental Chemistry Laboratory Section
167 11th Avenue
South Charleston, WV 25303**

June 25-26, 2003

**Robin Costas
Joseph Slayton**

**U.S.E.P.A. - Region III
Analytical Services and Quality Assurance Branch
701 Mapes Road
Ft. Meade, Maryland 20755-5350**

Introduction:

On June 25-26, 2003 an on-site review was conducted of the West Virginia's SDWA Laboratory Certification Program of the West Virginia Department of Health and Human Resources, Bureau of Public Health, Office of Laboratory Services. Laboratory SDWA certifications for chemistry are conducted by Dr. Wayne Morganroth, Chemistry Laboratory Supervisor, Mr. Larry Duffield, Chemist II and Mr. Greg Young, Chemist II. Laboratory SDWA certifications for microbiology are conducted by Mr. Thomas Ong, Microbiologist Supervisor, and Ms. Tracy Goodson, Microbiologist III. Charlotte Billingsley, Associate Director oversees the Laboratory Certification Program and reports directly to Andrea Labik, Director Office of Laboratory Services.

This review was conducted through interviews, laboratory records/file review and the review of program Standard Operating Procedures (SOPs). A joint inspection with the WV Laboratory Certification Program was not conducted during this assessment to allow more emphasis on records review (data audit) and discussion with senior management.

This program assessment was conducted by Robin Costas, Chemist and Joseph Slayton, Technical Director, USEPA, Region III, Analytical Services and Quality Assurance Branch, 701 Mapes Road, Fort Meade, Maryland 20755-5350.

Personnel/Training/Vacancies:

Since the last oversight review performed by EPA in 1999, an additional chemist has completed the Certification Officer's (COs) training course. Currently the WV program has two chemistry COs (Mr. Duffield and Dr. Morganroth) certified for inorganic and organic chemistry and one CO who just completed the certification course for inorganic chemistry (Mr. Young).

Unfortunately, the loss of organic analysis capability from the Environmental Chemistry section in 1997 has not made it possible for the chemistry COs to gain hands-on experience with the SDWA methods for organics. As a result, the review of SDWA organic procedures requires methods review and preparation of checklists by the COs as part of the preparation for assessments.

The Microbiology section lost a CO just prior to the last Agency review in 1999. Ms. Joyce Vance-Abshire successfully completed the Certification Officer requirements for Microbiology (letter dated July 19, 1999 from Dr. M.K. Smith). However, Ms. Vance-Abshire has since left the laboratory and has been replaced with Tracy Goodson. Ms. Goodson was attending the COs course for microbiology during this on-site assessment.

It is planned that both Mr. Young and Ms. Goodson will be performing inspections jointly with

the more experienced CO as part of their on-the-job training.

Also, since the last on-site review, Charlotte Billingsley has returned to the laboratory as Associate Director in a part time capacity.

Program Overview:

The WV Laboratory Certification Program is based upon the Manual for the Certification of Laboratories Analyzing Drinking Water, Criteria and Procedures Quality Assurance, EPA 815-B-97-001, March 1997 and upon the 40 CFR Part 141-143 SDWA requirements, as well as, the analytical methods referenced in these documents. This includes the requirement that laboratories successfully analyze at least one proficiency testing sample per analyte per method per year. All laboratories are also to have procedures and documentation, which are found satisfactory by an on-site inspection by State COs at least once every three years. All of the WV SDWA COs are trained professionals with years of laboratory experience (both Mr. Young and Ms. Goodson have about 4 years of bench experience).

Certification Program Documentation:

The WV laboratory microbiology certification program has developed an SOP/QA manual entitled: "Drinking Water Certification Program-Microbiology" (revision 8/21/01). This document includes the following topics: Introduction (cites various supporting federal regulations and the use of the EPA Lab Certification Manual as the focus for the WV Microbiological program); Laboratory Certification Officer (qualifications); Certification Parameters; Certification Renewal (table listing forms, mailing label files, etc.); On-site Evaluations (checklists, procedures, reports, follow-up, etc.); Adding a Certified Laboratory (In-State); Adding a Certified Laboratory (Out-of-State); Performance Evaluation Samples (indicated as "UNDERGOING MAJOR REVISION"); Records Retention and Storage; Drinking Water Laboratory Certification Renewal (form); Laboratory Information Form: Drinking Water Laboratory Certification Renewal *FINAL NOTICE* (form); Drinking Water Certificate; Water Survey Schedule (template to track projected on-site inspections); Presurvey Package (cover letter and pre-survey form); On-site Inspection Report (template); On-site Evaluation Checklist; Follow-up Letter (reminder notice template for response to the on-site inspection); Follow-up Letter (2) (template for responses that were not acceptable); tracking chart for on-site evaluations (tracking corrective actions and correspondence associated with on-site inspections); Application for Laboratory Certification (form); Letter in Response to Out-of-State applications (Note: includes WV's approach to "Reciprocity"); Letter Noting Receipt of Application (form letter); Key to List of Approved Tests (the WV Laboratory Certification Program groups analytes for certification); and a "Listing of Labs Certified in WV" (listed by analyte groups for both Microbiology and Chemistry).

The SOP for WV's Environmental Chemistry has been updated since the last on-site assessment. The Environmental Chemistry Standard Operating Procedures, Laboratory Certification Program

(revision 4/20/02 approved 5/2/02) includes: Organization chart; criteria for certifying laboratories (general overview and requirements for SDWA certification, schedule for applications, on-sites and PT study participation); acceptance of NELAC accreditation; posting by April 1st of each year on web page of the certification status of WV SDWA laboratories (chemistry and microbiology); schedule for report issuance (within 4 weeks of the on-site) and corrective action reports from the laboratories (within 60 days); parameter groups (used for billing, since certification is by method and analyte); and certification of out-of-State laboratories (after review of PT results, certificate from primary state, copy of last on-site assessment, and copy of QM/QC protocols with first application).

Both the WV Chemistry and Microbiology certification programs have adopted a fixed schedule for PT participation by the laboratories (main study the first three months of the calendar year) and any necessary make-up studies to occur with final PT based certification determined by the programs on October 1 of each year. Both programs track PT performance and on-sites using tabular listings. Recently a data base has been developed which lists the certification status of each laboratory for chemistry and microbiology by method and analyte. An update for the microbiology certification program SOP is planned to include the new PT schedule/plan.

Observations:

Laboratory Certification Records Management:

The documentation for the Microbiology and Chemistry Certification Program was complete and well organized. These records allowed the review of PT data, on-site reports, corrective actions and certification status and official communications. The PT program is well documented and the laboratories have been officially notified of the schedule and procedures (both microbiology and chemistry). Schedules of PTs and on-sites and certification issuance are tracked and organized in tabular form. Much progress has been made in this area by the Chemistry program since the last EPA assessment (records for microbiology certifications continue to be excellent). As per the recommendation from the last EPA program assessment, the return/addition of the Associate Director and administrative assistant/clerk support have significantly improved records management in the chemistry certification program. Much work was completed by Dr. Morganroth and Ms. Billingsley.

On-site Laboratory Inspections:

All required on-site assessments and follow-up corrective actions and communications have been completed by microbiology. However, despite quarterly updates to EPA during the first two years since the last program review and despite repeated promises, the problem of not performing the required on-site inspections continues for chemistry. During this EPA review, it was suggested that past problems with scheduling the shared State vehicle should not be a significant problem in the future as the vehicle is scheduled further in advance. It was suggested that the shortage in chemistry COs should be greatly helped with the new CO addition. Also,

during this assessment it was pointed out that the great majority of SDWA analyses required for the WV program are conducted by commercial laboratories. It was stressed that on-site reviews of commercial chemistry laboratories should be made a priority to assure the quality of drinking water in West Virginia.

Findings & Suggestions:

1. On-site Laboratory Inspections:

Finding: Though several laboratories have dropped out or have been decertified for chemistry, of the eight remaining in-State laboratories in the program, the on-sites for three laboratories are greatly overdue. (All three were last assessed in 1997-making them three years overdue for an assessment and six years total since the last visit by WV laboratory certification personnel).

Suggested Corrective Action: During the closing meeting with the Laboratory Director, Associate Director and lead chemistry CO, the necessity for completing these on-sites was stressed. These must be conducted as soon as possible particularly since the laboratories continue to be listed on the WV web page as fully certified. In the future, laboratories which are due for an on-site and have not had one within the 3 year cycle (any over one year overdue) should be decertified by the WV program.

2. WV Web page (www.wvhdhhr.org):

a. **Finding:** A discussion with Victor Wilford, Environmental Health Services, indicated that it is critical that the web site listing of laboratories certified by WV be accurate since the water utilities are instructed to employ such laboratories for SDWA analyses. Unfortunately, this important source of information is not being kept up to date (last updated March 2002). Since that time, it was indicated that several laboratories have lost their WV SDWA certifications and should not be listed on the WV web site at all, e.g., Reliance Analytical Services, Inc.

(Hedgesville, WV), as a result of a WV on-site assessment on July 25, 2001. **Suggested Corrective Action:** During the closing briefing of this assessment it was agreed that the WV program engineers would be notified by Email as soon as possible of the laboratories that should not be listed on the web site. Also, it was agreed that the web site would be updated with regard to de-certified laboratories as soon as possible.

b. **Finding:** The web site lists certification only by parameter group, e.g., Trace Metals group I and II, and not by method and analyte/s. **Suggested Corrective Action:** It was agreed during the closing meeting of EPA's assessment, that Laboratory Services would complete the necessary upgrade to the web page that will allow the page to list (or point to files containing) laboratory certification status by method and analyte.

3. Certification of Out-of-State Laboratories:

Finding: The certification of out-of-State laboratories represents a considerable drain on

resources. It was pointed out that this work is justified for microbiology since the laboratories are near the borders of neighboring states and do a significant amount of WV SDWA work. However, the amount of chemical analyses being done by out-of-State laboratories is unknown.

Suggested Corrective Action: It is suggested that Laboratory Services work with the WV Environmental Health Services program managers to determine if the amount of work sent to out-of-State laboratories, and based upon that information, determine whether the certification of these laboratories for chemistry should be continued. It is suggested that future applications for WV certification should include a listing of water supplies for which the laboratory has performed work for in the past or is projected to perform work for in the future. If this portion of the chemistry certification program is unnecessary, removing it or reducing it should help direct available resources to conduct the necessary work for in the in-State laboratories.

4. Scope of Certification/Approval:

Finding: The listing of laboratory certifications and approvals provided by Laboratory Services for chemistry do not include the full scope of the SDWA program and also include certifications which are not provided by Laboratory Services. **Suggested Corrective Action:** Laboratory Services should work with the WV Environmental Health Services program managers to determine possible additional areas for certification and/or approval, e.g., alkalinity, bromate, calcium, chlorite, conductivity, orthophosphate, pH, turbidity, silica, Specific Ultraviolet Absorption (SUVA) and TOC. Also, consideration should be given to dropping radiochemistry and asbestos from the listing.

5. Additional Suggestions:

- a. Efforts should be continued to clean-out outdated milk records and other files in microbiology file cabinets to make room to allow organization and filing of out-of-State microbiology laboratory certification records (same organization/records management as for in-state laboratories).
- b. Clerical help is needed in the microbiology section. Valuable time of professionals is spent filing and organizing the many records associated with laboratory certification, microbiological analysis records, and bottle requests.
- c. Consideration should be given to requiring all records/information exchanges with the SDWA laboratories to be electronic. This would speed the process and provide an efficient method to easily organize records (in directories).
- d. The Environmental Chemistry Standard Operating Procedures, Laboratory Certification Program (revision 4/20/02 approved 5/2/02) needs page numbers and section numbers.

Assessors:

JS for RC 7/16/03
Robin Costas Date

Joseph Slayton 7/16/03
Joseph Slayton Date